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T. MITCHELL PRUDDEN, M.D.

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T. Mitchell Prudden

Biographical Sketches and Letters of
T. Mitchell Prudden, M.D.

“*When physicians began to reënforce the priceless lore of the bedside with the resources of the laboratory, a Science of Medicine took form. . . . When they began to think of disease in terms of cells and organs, and sought after its tangible incitants, they struck at last into Truth’s great highway. A way that was to lead to discovery of real causes of disease . . . and to a higher and more effective Art of Healing.*”

New Outlooks in the Conquest of Disease.

NEW HAVEN
YALE UNIVERSITY PRESS
1927

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FOREWORD

THE preparation of this volume is due to the desire of friends of the late Dr. T. Mitchell Prudden for more acquaintance with the personal side of a life largely devoted to science at a notable period in the advancement of knowledge of biology and medicine. The original plan has been enlarged by the wish also to compile various appreciations for preservation.

A few autobiographical notes left by Dr. Prudden form the basis of the sketches of his early years. His own words, either from journals, letters, reports, or papers, have been used throughout when possible. No stenographic record was made of the three rare and discriminating addresses at the funeral service held at the Rockefeller Institute, April 12, 1924. The spirit of all three is, however, secured by the quotation of various letters from Dr. William H. Welch, who shared his interests and enthusiasms from early student days; by Dr. Francis Carter Wood's reproduction of his address from the standpoint of a pupil and friend; and by the kind permission of Dr. Simon Flexner, his close associate at the Rockefeller Institute, to use the tribute which appeared in *Science*, November, 1924. We are indebted to Dr. Northrup for reminiscences; to Dr. Wadsworth for treatment of Dr. Prudden's influence upon public health in New York City and State; to Dr. Ludwig Hektoen of the John McCormick Institute of Infectious Diseases, Chicago, Ill., for permission to use his estimates of the scientific value of Dr. Prudden's work as given in the paper prepared for the meeting of the National Academy of Science in November, 1925; and to other students and fellow scientists: Dr. Haven Emerson, Dr. Park, Dr. Freeman, Dr. Ewing, Dr. Soper, and Dr. Doty, as well as to Dr. Bissell for appreciative recollections.

It serves better the purpose of the book that we have combined contributions from so many different pens, but as a result, it has been impossible to avoid some repetitions and duplications, or to preserve a strict sequence. The aim has been to gather the thoughts of various friends upon the man of science, the writer, the teacher, the public health worker, the archæologist, and the friend, rather than to follow chronological order in the portrayal of his life, or to attempt an adequate appraisal of his influence upon the wonderful advance of medical science in the last fifty years.

There are three nearly complete sets of the scattered magazine articles and reprints listed in the bibliography. One of these is in the library of the Rockefeller Institute; another belongs to the New York Academy of Medicine; and a third will ultimately go to the Yale Medical School.

In the hope that it will preserve the remembrance not only of his achievements but of the qualities of mind and heart that most impressed those who knew him best, the book is presented to his friends and associates.

Lillian E. Prudden.

T. MITCHELL PRUDDEN

EDUCATION

Parentage—Boyhood Influences—Business Experience—College Life—Variety of Scientific Study—Instructor in Chemistry at Yale—Study of Medicine in New Haven and New York—Interne at New Haven Hospital—Two Years' Study in Germany.

THEOPHIL MITCHELL PRUDDEN, born July 7, 1849, was the fourth son in a family of four sons and one daughter. The oldest son, Edward, died at the age of two years, and the other children were named respectively: Henry, Theodore, Theophil Mitchell, and Lillian. The father, George Peter Prudden, a graduate of Yale College in 1835, was a Congregational clergyman and a direct descendant of the Reverend Peter Prudden, one of the founders of the New Haven Colony in 1638. In 1639-1640 this ancestor separated from the New Haven Colony and, with a company of those who had come with him from England, helped establish the church and town of Milford, Connecticut. It was upon a farm in North Milford, now known as Orange, Connecticut, which was part of the original assignment of land to the first Peter, that the father of Dr. Prudden was born. During his preparation for the ministry in New Haven, George Peter Prudden taught in a young ladies' school of which Eliza Johnson of Southbury, Connecticut, was a pupil. It has always been understood that it was botany with field excursions which gave opportunity for an acquaintance that led to the marriage of the young minister of twenty-three and the girl of twenty in 1839.

His father, a Peter of the seventh generation, had sold out his Orange farm while George was in college, and set forth to seek his fortune by investing in what was then "western" land. With his household goods and family he embarked on a sloop in Milford Harbor and sailed around to Albany where they transferred to a more commodious boat of the newly-opened Erie Canal. After a journey of two weeks from Albany, they landed at Lockport, New York. The story of why he did not make the anticipated fortune does not belong to this narrative, but this removal furnishes a reason for the location of George Peter Prudden in his first parish in western New York where the two older children were born.

It is a hint of the religious feeling of the father that he named the first boy born in the Middlebury parsonage Theodore, the gift of God, and another, born two years later, Theophil, the lover of God. There was no anti-religious indication in the use by Dr. Prudden of his middle name rather than Theophil. The name Mitchell had been given by his maternal grandmother, Sally Mitchell Johnson. He was always called Mitchell in the family. It was an early fancy of his to signalize his affection for this dearly-loved grandmother and a favorite aunt, Nancy Mitchell, her unmarried sister, by writing his name T. Mitchell, a form then rather unusual.

The three Connecticut parsonages, Middlebury, Southbury and Watertown, in which Dr. Prudden spent his early years were all within ten miles of each other and were in that part of the state in which his forbears on both sides had lived for many generations.

They were all plain homes with no modern conveniences, but doubtless quite as comfortable as most country homes of their time. Books, which have always been the tools of New England Congregational ministers, were the only luxury which a growing family, a small salary, and a fixed adherence to the principle of giving "one-tenth to the Lord" permitted. The library was by no means strictly theological. There were history, poetry, general literature, and such science as was then current upon the shelves. Little if any fiction was ever bought. A certain volume of "Moral and Religious Anecdotes" was in demand by the children as giving a little spice to Sunday afternoon reading. There were Sunday School library books, among which one remembers "The Ministering Children" and "The Schönberg Cotta Family." There was reading aloud evenings from the Abbott histories and the Franconia Tales and later from the writings of Mrs. Stowe, but the general field of literature which dime novel connotes was rigorously taboo. One "hired-girl" smuggled in "Frank Leslie's" for a red-letter season so that Mitchell, at least, did not miss from his childhood the illuminating influence of "Luke Hammond, the Miser," and sundry other lurid tales.

George Peter Prudden was a man of poetic temperament, fine literary taste and ability, and a high sense of the spiritual values of life. He evidently inherited some traits that Cotton Mather ascribed to the Reverend Peter Prudden, whom he called "an example of gravity, piety, and boiling zeal against the growing evils of his time," for this George Peter of the eighth generation maintained a persistent crusade, in the pulpit and out, against slavery. His Thanksgiving Day sermon upon John Brown, preached in Watertown in 1859, brought down the wrath of prominent members of the congregation, but there was only satisfaction in the parsonage that the truth had been proclaimed.

Dr. Prudden's mother was a woman of rare common sense and a more than ordinary equipment of the saving grace of humor. She was willing to sacrifice herself to any extent to have her children well-trained and educated. She was not very strong, but stretched the family resources by an inborn faculty of knowing how to make the most of everything—time, strength, and money. The boys' clothes were made at home by the help of a village tailoress until they were well-grown.

There were always family prayers, and a blessing was asked before each meal. The Puritan inheritance made for some strict Sabbath rules in the minister's family, but "all strictness was tempered by a sympathetic realization of the youngster's point of view, and the necessity for amusement, along with familiarity with things worth while." For instance, games of chance were ruled out of the evening diversions because they involved no skill, but all other games were encouraged. There were always chores to be done by the father and the boys; for a horse and sometimes a cow must be cared for; a garden had to be planted and hoed; and wood must be cut and brought in; while inefficient and uncertain help inside the house often made necessary a division of household tasks among the children.

The father stood among the liberals of his day, and the emphasis of the religious teaching of the family was on such Christian ideals as made obedience, truth, and mutual service essential. It was a potent influence that led one son into a life of business diligence for the sake of the whole family, another into a fruitful ministry that helped many through the new light in which he presented the old faiths, and the third into service to the world through science.

Mitchell remembered nothing of Middlebury and nothing of Southbury except the old brick school house opposite the parsonage, and the birch tree swimming hole. In Watertown began the real boy life with its public school, and its association with fellows of, and not of, his kind.[1]

It was perhaps a valuable experience early in life to be in intimate contact with others who had much more money, better clothes, and finer homes; for it chanced that the closest neighbors of the Watertown parsonage were wealthy New York families, whose sons nearly corresponded in age.

With Ben Curtis, Mitchell maintained a secret den in a swamp safely removed from the village street where they smoked corn silk cigarettes and planned lives of adventure together. In Watertown is recalled the coming and going of frightened runaway slaves, helped on their way toward Canada by those who maintained in their homes a chain of stations, which, in spite of the law of the land, carried many to freedom. Singly, or in pairs, they were usually brought in at night by the parson of a neighboring village, were hidden during the next day in some dark room, closet, or the barn, or where they could be quickly transferred to them should any inquisitive stranger come around, and after dark the next night carried further north to the next parson.[2]

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[1] Autobiographical Notes.

This must have been only a side branch of the so-called "underground railway," but the ministerial horse and buggy were thus turned often to the service of the oppressed. It was only by accident that the children now and then had sight of these dusky guests, and they understood but little of the significance of the unlawful movement.

Mitchell's father was in the habit of going to western New York every year to visit his parents. When Mitchell was about eleven years old, he and Theodore were taken with him on what was apparently their first railway journey. They made the acquaintance of a large group of cousins, visited Niagara Falls, picnicked on Lake Ontario, and on the return trip stopped over a day in New York where among the sights was a visit to the place where the new Central Park was being laid out. They saw the harbor from the Brooklyn ferryboat, since it was at least fifteen years before any bridge was built.

No study of the influences of early life would be complete without a reference to long visits at his Grandfather Johnson's, whose fertile and attractive farm lay on the banks of the little Pomperaug River in the town of Southbury. Here the routine of farm life became very familiar. A kick from a frisky horse gave Mitchell a broken right arm one spring, but he found "the resulting degree of ambidexterity led to usefulness in later technical occupations." Several long and more or less severe illnesses occurred during the years of boyhood, and they entailed convalescence at his grandfather's. Asthma, which compelled sleeping in a tilted chair for long periods and was a great handicap until he was twenty years of age, added to other ailments, gave him an unusual early acquaintance with the ways of country doctors. This condition interfered greatly with the regularity of his school attendance, and indeed it was seriously questioned whether he would have the health to undertake any consecutive course of study or any occupation that required hard work. This accounts for the prolonged visits at the Southbury farm, which was a second home to him for many years, and for great freedom in the use of his time when other boys were confined in school. There were plenty of farm tasks like driving home the cows, riding the horse to mark the corn rows, raking the hay, walking the two miles to the post-office for his grandfather's daily New York *Times,* or helping the men cut the winter's firewood or shingle the new barn. A journal in a boyish hand tells of the varied occupations on one of these visits and shows an early penchant for expeditions by himself into the woods or hills, either walking or on the back of one of the old farm-horses. Usually there was a definite purpose: to salt the cattle pastured on a distant hill; to dig flag-root for a prized confection; to select the right wood for croquet balls and mallets, when that new game became desirable and the store product was unattainable; to make and stock an aquarium; to cut suitable material from which to manufacture oars for the boat which a local carpenter helped him construct, and in which he used to toil up the little river for the pleasure of floating down. The water was too shallow and the current too strong for real boating, and no one but he had ever tried anything of the sort. His grandfather was an intelligent farmer much respected in the community where he was commonly called "Squire." He was not a money-getter, although a diligent and thrifty manager of the farm and of the means which he inherited. He was a shrewd observer of men and things, but talked little; and the children were somewhat in awe of him, except Mitchell, who was always able to say and do things that no one else would venture. Either because of his name or because he was not as strong as the others, Mitchell was always regarded as the favorite of the kindly grandmother. His grandfather had never considered the natural instinct of children for play as of great importance, but he followed a suggestion of Mitchell's and built a dam that turned a swampy hollow into a safe skating place at the bottom of an equally safe hill where the home-made sleds, such as the owners of the modern flexible flyers would despise, could be used. Two outstanding characteristics marked the boy even in early years: one, an ingenuity in devising interesting sports and games; and another, a persistency in overcoming obstacles to the accomplishment of any desired aim. At the farm the parsonage children took great pleasure in the serial stories of Wilkie Collins, Charles Dickens, and Trollope that were appearing in *Harper's Monthly* and *Harper's Weekly* to both of which his grandfather subscribed regularly.

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[2] Autobiographical Notes.

When the Civil War came on, Mitchell was found drilling with his school-fellows, armed with wooden tin-bayonetted guns, and visiting the field at Litchfield where one of the first Connecticut regiments was encamped to make ready for its grim work. The family life was now transferred to a farm two miles south of Watertown. His father's health had become too precarious, owing to long-continued loss of sleep from asthmatic conditions, to make it wise for him to assume the care of another parish; but it was hoped that farm life would benefit him as well as the boys. "Here, Mitchell went to a district school one year, taught by his older brother Henry, and took lessons in drumming from a neighboring farmer."

One of his mother's efforts to stimulate thought during the years on the farm was a family newspaper published "semi-occasionally" to which his father and Henry contributed poetry; his mother stories; Theodore general literature; Mitchell advertisements, jokes, and "setting up" in long hand copy; and the youngest conundrums. Another plan was an evening geography hour when all the family gathered with their mother about a big atlas. Each contributed something in the way of answers to assigned questions about the country or place under consideration, or the best way to get there. It became a vivid and fascinating game.

After a two years' experiment this farm was sold, and the family moved to New Haven where a house was purchased in which his father maintained a private school for boys, which Mitchell attended and where he again edited a paper. This house, at the corner of Lincoln and Bradley streets, was the home of the family for some years. In the meantime, Henry, the oldest son, was more and more assuming financial responsibilities. He had been eager for college training and was ambitious to become a lawyer. He possessed marked ability for a professional career, but had courageously and generously relinquished his personal desires and found employment in New Haven with a firm which manufactured and sold furniture. By hard work and close attention to every detail, he made himself of such value to the concern that the firm name became later "Bowditch and Prudden," with Henry at the head and the leading spirit in an expanding business. Theodore, who graduated from Yale in 1869, boarded at home to lessen expenses, and held a teaching position in a night school.

In 1866, the youngest boy was seventeen, and with his frail health and somewhat desultory schooling was not sure whether he would not rather enter some gainful occupation than take a collegiate course. He, therefore, eagerly accepted an opening in the furniture establishment with Henry. To earn even $5.00 a week was a refreshing experience for him, which carried him cheerfully by the sweeping and dusting days of an ordinary office boy. The habit already established of doing well whatever he undertook to do at all, soon advanced him to the more interesting work of selling and bill-collecting, and then into bookkeeping, an experience which was valuable later in varied financial responsibilities. He won the liking of all his associates, and at the end of a year and a half had saved something from his gradually increasing wages. The employer was anxious to retain him because "he would make a fine business man." But by then his mind had become sufficiently clarified to make him unwilling to settle into a business life without more educational equipment. He spent the next year in a rather drifting fashion at home. He was not in very good health, and it was generally understood by the family that his good sense could be trusted to lead him into some satisfactory plan for his future. He began the study of French with a private teacher, and took a French newspaper. His reading covered as wide a variety as a translation of Herodotus, Gibbon's Roman Empire, and Dickens. His diary speaks of discarding a book on digestion for a treatise on astronomy because the former was "insignificant" compared with the other. He attended lectures both literary and scientific, was interested in social ventures and adventures, and was active in a debating society of young men of his age. He was evidently useful about the house; for he speaks of caring for the fires, of setting a pane of window glass one day, and laying a carpet another. He made out his own chronological table to cover the history he was reading. An illness in the spring of that year brought another opportunity for outdoor life in Southbury, and we find the shooting of crows from the cornfield and carpentry added to the training of eye and hand that he had been acquiring through the seemingly idle boyish days.

By 1868, his aspirations for more knowledge, especially in the lines of physical science, became clearly defined, and on the assurance of Henry, the ever-ready and devoted counsellor of the family, that he would see him through, he looked about for some inexpensive school where he could find courses that would fit his need. He chose the Wesleyan Academy at Wilbraham, Massachusetts. Here he says he "drifted along through the first term and then decided upon a long considered project to enter the Sheffield Scientific School at Yale." Of the Wilbraham life he also says he "engaged in his share of pranks" and was "rather chummy with the boys and girls of his class." But there were Latin, Greek, and some Mathematics needed to bridge the gaps in his previous education, and hard work was put into the preparation that enabled him to enter Yale in the fall of 1869 under a Connecticut state fellowship that gave him his tuition throughout his college course. Living at home, while it lessened the financial burden, lost him much of the social contact that should belong to college life. It was a more than ordinarily thoughtful young man just past his twentieth birthday who began a definite preparation for what he hoped might be some phase of scientific work.

"The course at the Sheffield Scientific School was then three years long and the first year's work the same for all—Physics, Chemistry, Mathematics, French, German, and English." Invited early to join the Berzelius Society (known as the Colony Club), "its associations were throughout among the most salutary of the college influences." By the end of the first year he had decided to study medicine, but "whether to practice or as a phase of education was not for some years quite clear." That was a time when a new spirit was coming over the old traditional Yale, and the Sheffield department was in the hands of a group of forward-looking men. When, therefore, two young men, Prudden and Russell,[3] both planning to be medical men, found a lack of any course giving the combination of zoölogy, botany, and organic and physiological chemistry, which seemed best adapted for preliminary study, the faculty decided to organize the new course with these two as the first students.

At that time there was only one building in the Sheffield Scientific School, the old stucco structure with a square tower, facing down College Street, which is still standing. Some of the professors of the original Sheffield School were yet on deck, others were retired but cruising about at leisure, and objects of interest to us. It was a fine bunch of the then active professors, and for the last two years of the course and for the two memorable graduate years which followed at New Haven, Prudden was in close touch with many and in inspiring relationships with all of them. There were Brush, Brewer, Lyman, W. D. Whitney, Lounsbury, Gilman, Eaton, Verrill, Sidney Smith, and Allen. Mixter was Instructor in Chemistry and Prudden his laboratory assistant in his senior year.

As there were only two of us in the biological course, our relation with some professors were much more personal than is common with students. Thus we were invited for special advanced work in botany to Eaton's house for work on his herbarium; we were placed in Johnson's private laboratory for physiological chemistry; we worked rather as assistants than as students under the eye of those inspiring and devoted teachers, Verrill and Sidney

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[3] Thomas H. Russell, who became a prominent surgeon in New Haven.

Smith, in the old "Bug Lab"—alias the Zoölogical Laboratory—and Professor Marsh's headquarters occupied the lower floor of the old Trumbull gallery which stood within the college square behind the present College Street dormitories. Upstairs were the offices of the President and Treasurer of Yale College, and the maceration of great mammalian skeletons and the diverse pickling fluids used in the laboratories—not always sanitarily successful—gave rise to frequent and furious smells, and Prex Porter would now and then send a discreet messenger down to inquire if it were not practicable to "ameliorate" these "without detriment to the advancement of knowledge." Professor Kingsley, the Treasurer of the College, suffered in silence. These last two years in Sheff were full of the keenest interest. We collected much in botany and bugs and scoured the land and sea about New Haven in search for specimens. But we had memorable seasons with Whitney and Lounsbury and Gilman. I achieved what was admitted to be a recognizable freehand drawing of the bust of Caracalla under Professor Niemeyer in the Art School.[4]

In his senior year the Berzelius Society organized a "Scientific Club" for public service, and conducted a course of lectures in New Haven for which T. M. Prudden was treasurer. They paid expenses and had a small balance. Among others there were as lecturers: Tyndall, Asa Gray, C. F. Chandler, Professor Meyer of Stevens Institute, and George F. Barker.

In addition to honorable mention in English Composition he was strongly urged by Professor Lounsbury to specialize in English, and shared a prize in Mineralogy under Brush. The instruction in free-hand drawing of which he speaks so slightingly was the only training he ever had, except practice, for the free-hand illustration of microscopic investigations so invaluable in all his life work. It was a purely voluntary course undertaken under a dawning sense of its necessity if one was to preserve the wonders of the microscope.

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[4] Autobiographical Notes.

One college summer was spent in an effort to secure money by the hard road of a book-agent. He was given a district in northern New York, and his book was a *History of China*. Many miles of country walking were covered, and a fair number of sales were made; but neither book nor district was very favorable for the undertaking, and the net result, all expenses paid, was but $10.00. It paid better to work for his grandfather on the farm, although he never gave the boys more than the wages of an ordinary hired man since the labor was worth no more. They did, however, receive some loans from him, which were scrupulously paid back with their first earnings.

In the last spring vacation of senior year, 1872, Russell and Prudden chartered the yacht "Washington" and, taking along a few choice spirits, made a week's dredging expedition down Long Island Sound. They dredged off Watch Hill and Newport, and went over to Wood's Hole and Edgartown, had a glorious adventure, and brought back much plunder, establishing new habitats for several marine invertebrates, as is indicated by Verrill and Smith in their report on the "Invertebrate animals of Vineyard Sound and adjacent waters," published in 1874. It was the first dredging that had been done about Wood's Hole and adjacent waters.[5]

His thesis for graduation was "The Anatomy and Habits of the Larger Fiddler Crab" to which he applied all the thorough methods of later scientific work. Whole forenoons were spent in the broiling sun lying out on the muddy flats and digging in the marshes of Mill River at the foot of East Rock, studying the feeding habits and working out the nervous system of this active little crustacean. Great care was taken in so mounting his specimen that every articulation of its anatomy should be apparent. He began work upon it May 2 and finished June 20. He said, "The subject broadens as I go on, I could find work enough for a whole term on one species." His thesis was one chosen for reading at the anniversary exercises in June, 1872.

In the summer of 1872, he and Hawes were members of a dredging party under Professor Verrill in the fascinating waters of the Bay of Fundy with headquarters at Eastport, Maine. He speaks of "glorious things" found on some of their expeditions, and of the sorting and naming of specimens as lasting until late into the night. Professor Verrill turned the crustaceans over to him. Visits were sometimes made in the early morning to neighboring fish weirs to see if anything unusual for dissection could be found. It was a part of every walk to add new plants to his collection, and he lists one hundred new ones that summer. In addition he made a considerable study of algae with Professor Eaton, who was with the expe-

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[5] Autobiographical Notes.

T. Mitchell Prudden

Class of 1872 S., Yale University.

dition for a time. At this time his first contact was made with North American Indians; and although they were the somewhat degenerate Passamaquoddy tribe, he found them interesting enough to spend a night at their settlement where he saw a powwow and dance.

"About the middle of the last term of his senior year, Professor Brush told Prudden that Professor Mixter of Freshman Elementary Chemistry, whom he had been assisting, was to be abroad for a couple of years, and he was to be asked to take charge of his classes as a substitute." It all seemed very formidable to the young graduate, who went to his first class with "much quaking," because he said he was "not cut out for a teacher," but added, "It makes a man have his wits about him to talk impromptu before a critical class." "There were lectures and recitations, and a practicum for the whole class once a week. The various exercises were at first visited by Brewer or Brush, but presently all ran along in the usual way." It was a novel experience to attend Faculty meetings, and he said he "felt like a cat in a strange garret" when appointed to serve as secretary for that august body. His salary was $650.00 and room rent, and the arrangement of his hours afforded him an opportunity to begin the study of medicine at the Yale Medical School at the same time. The requirements for medical education under the old two-year lecture system of fifty years ago were so small that much was left to the zeal and enthusiasm of the student and his preceptors. Prudden had already enlarged for himself the meagre facilities of the Medical School by the voluntary choice of his scientific courses, and this strenuous program which he adopted advanced his preparation by two years.

The home of the family was temporarily given up when his father died in 1872. Hence, for the first time, he was free to make his own arrangements for living. During his teaching period he boarded with a Mrs. Parker on High Street, where he had the congenial society of several interesting and admirable friends. His study was in the tower of the old Sheffield Hall, with a bedroom under the roof which he shared with George W. Hawes. Hawes was his "genial and congenial friend" for a decade and probably the closest friend he ever had. He had been his classmate and belonged to the same fraternity. He was a mineralogist, and for a time was also an instructor in the Sheffield Scientific School. He was one of the pioneers in the study of rock structure by microscopic sections. He wrote an important monograph on the mineralogy of New Hampshire, received the degree of Ph.D. from the University of Bonn, in 1880, and at the time of his death, in 1882, was Director of the Geological Department of the National Museum at Washington. Dr. Prudden says: "The lads of my time and crowd at Sheff. were a very much in earnest lot, and we aspired to the mastery of many sciences which held the stage in quick succession during our under- and post-graduate days. Botany had its little hour and Hawes and I were busy collectors." They walked together on these botanizing expeditions through all the country in the vicinity of New Haven, and learned where to find the unusual orchids and other rare flowers. Their "stuff" was for the most part turned over to the scientific possessions of their society, but Dr. Prudden retained the contents of a large herbarium case which he kept until near the end of his life and then gave to the Boy Scouts of New York for use in verifying botanical work. Hawes and he developed an ability to take long walks under the incentive of their interest in rocks and plants, and it is remembered that one holiday they walked as far as Hartford. It was probably the only systematic exercise they ever allowed themselves except rowing in the harbor. One especially favorite walk was over Mill Rock, and if it was a winter night and snowing, too, there was an added charm.

From his notebooks and memoranda it appears that he occupied a sort of quartermaster position on the expedition to the West with Professor Marsh in 1873. Doubtless, in this way, he earned his expenses for this unusual experience. Professor Marsh's discovery of the prehistoric three-toed horse had aroused much interest as another link in the chain of evidence for evolution. It was at the time of the Modoc Indian War, and would have been a dangerous expedition but for the escort of a guard of soldiers. Thirty-six days were spent among the sandhills of Nebraska. Each night's camp was formed in a hollow square where the horses were kept. Wagons were in front, soldiers on the sides, and the scientific party in the rear. It was a sufficiently imposing outfit to prevent hostile attacks. Prudden wrote an account of this, the first of his many trips to the West, for the New York *Tribune*, which is the earliest newspaper contribution from his pen of which we know. From the yellowed clipping we take the following quotations:

> It was with extreme joy that we rode down to the banks of the Niobrara, not only because we were to go no further into the wilderness but because here for the first time nature left her dull platitudes of sand and gave us some really fine river scenery, and here were trees, the blessing of whose shade we had never realized before. . . . Here our real work began. The "bone sharps," as we were called by the scouts, were divided into two parties, and accompanied by sufficient guards, who were posted at prominent points near our working-grounds, we scoured the bluffs on both sides of the river for more than a hundred miles. The escort with the wagons moved far enough daily to accommodate our search. . . . The soldiers of our escort were at first inclined to make merry at our expense and despise the ill-directed zeal which we exhibited, but they too were soon drawn into the vortex, and became the most ardent of collectors, although at the cost of two or three mastodons and camels, which were broken up and cast aside as rubbish. We spent twelve days of hard work on the river. The weather up to this time had been very hot (98 to 104 in the shade) but on our return march we were blessed with cloudy weather, and a few of those little prairie episodes known as hail-storms. I know of nothing in nature more absolutely fiendish than great jagged hailstones when they come pounding down out of the clouds on men's heads and shoulders unprotected by roofs or trees. Saddles, tin basins, blankets, pails, anything which can afford the least protection, are madly snatched and held over the head under the bombardment of lumps of ice from one to three inches in diameter. In one of these storms our whole herd of stock became frantic and stampeded before the gale. When we crawled, bruised, wet, and

> disgusted from under the heaps of bedraggled canvas that had once been our tents, and realized that our animals were gone and we were on foot in the desert, our dismay was beyond description, but the animals were found huddled in a nearby canyon the next morning. . . . Traces of the Indians were everywhere seen on the march, but no straggling was allowed and every precaution was taken against surprise. We found at one point in a clump of bushes an Indian sign left by a war party for the information of their friends; a white rag to attract attention, two beaver skins on which were painted the forms of horses hoofs, and beneath a small package of tobacco. It was interpreted by our guides as meaning that a small party had made a raid upon the whites and captured seven horses and one mule. The tobacco was an offering to the Great Spirit in token of gratitude for their success. . . . We emerged from the sandhills, brown and hearty but tired with sun and heat, having ridden nearly 600 miles in the saddle, and carried wagons over a country never crossed by teams before. . . . We packed and shipped our fossils from North Platte.

After a week of rest, which he utilized in a trip to Utah, a second smaller expedition was outfitted at Fort Bridger for another month's hunting for fossils among the clay bluffs toward the Uinta Mountains. They followed partially one of the old California trails. The glare of the sun on the white cliffs was so trying that they did most of the work in the early morning. A three days' camping and tramping trip into the high mountains gave him his first experience of the joys and rewards of that wholesome sport. Thirty-six years later, he wrote of that summer as follows:

It is a pleasant memory which lingers with the writer, of an undergraduate summer spent in this region under the tutelage of Professor Marsh, who was so wise in the lore of these crumbling hills. Most vivid of all, perhaps, is the recollection of a long, hot week whose daylight hours were spent alone astride the shelving edge of a low weathered butte, with hammer and stone-chisel, pecking away the rock around the fossil head of a preposterous beast, something like a crocrodile, I fancied, which once had floundered about in that old inland sea. Every day, as soon as the click of the chisel began, three huge grey wolves came peering over the edge of the bluff a hundred feet or so above me, and here they stood, alert, but silent, all through the hot day. A hallo and a sudden wave of the hand would send them scampering off, but presently they were there again, attentive as ever to the strange thing below. It was a far cry back from my contemporaries upon the bluff, who seemed to have very little business of their own on hand, to the old inhabitant at my feet; and though we hadn't much in common, we all got on very well together, and parted friends.[6]

The following year he went with George Hawes on a buckboard and walking trip through the mountains of Virginia and North Carolina, gathering rare plants and studying rocks and human nature. After they had succeeded in disarming the suspicion which their vagaries in going about with hammers and long tin boxes had aroused, they even penetrated into the haunts of the secret stills. A specimen of the Venus's Fly-trap, brought back from this expedition, was carefully kept in a flower-pot by his sister for exhibition that fall in pseudoscientific circles at Vassar.

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[6] *Great American Plateau,* page 80.

About this time he withdrew his membership in the United, then the North Congregational, Church in New Haven, which he had joined when a lad of fifteen. Unscientific Bible study and unnecessary elaborations of creed made it difficult for many conscientious thinkers in a world stirred to its depths just then by the writings of Darwin and Huxley, to find within the churches the freedom of belief they needed. To a mind accustomed to prove and test all things before accepting anything as truth, it became impossible to fulfil the obligations of church membership, and it seemed to him that the only honest course was to withdraw. He was never thereafter a regular attendant of any one church, although there were, he said, few churches in New York which he had not attended either as a worshipper or "in practical studies of the side-shows of the great spectacle of human endeavor after the unknowable." His thought is revealed by extracts from a letter written to his mother, who was naturally disturbed by his action.

> You know me well enough to recognize that I am not a giddy head who snaps up every new notion which appears, and that I neither ground nor throw aside a belief without thought. Your ideas of the antagonism of scientific study to religion, I do not recognize at all. I think it utterly false and that it is doing infinite harm both to true religion and to the advance of scientific truth. I see the necessity of faith, but not of an unreasoning faith. That my scientific training leads me to be critical in matters of religious belief, I acknowledge, and it should be so. It is no easy road one has to wander when he begins to doubt any dogma or belief of his church. If one need not think or question, it were easy, and indeed agreeable, to depart in

no wise from the traditions. There is no way for me but, with all caution and earnestness, and with all the light from whatever source it may be, to follow it out to wherever it may lead. I can hardly say yet how far my mature thought will compel me to modify my religious belief, but certainly enough to break my sympathy with the particular church association to which I belonged. I, too, am sure, with you, that it will come out right in the end, but whether it does or not is not my business. Mine is to do what I consider right. . . . I hope sincerely we may sometime see things more in the same light. I am sure there is truth in what you believe, none the less that I cannot accept all the details. I recognize your honesty, sincerity, and earnestness, and hope it comes to you to see the same in me.

He was never an unbeliever or scoffer at religion, and was always tolerant and considerate of others who found satisfaction in its organized forms. His life throughout was dominated by the spirit of true religion. Self-mastery, self-sacrifice, and helpful service were the Christian virtues that he carried over from his Christian inheritance and training into the "temple of Truth." Thereafter his worship on Sundays was often in the fields and woods.

He had given himself a fair chance to decide which of the alluring opening fields of science he would choose. Opportunities in chemistry beckoned him, but he remained true to his first choice because medicine, he believed, furnished the widest avenue for service to humanity.

He went to New York before taking his medical degree at Yale in 1875 chiefly to look about in the medical world and attend the spring lectures at the College of Physicians and Surgeons. He attended clinics by Drs. Alonzo Clark, Thomas Sands, Markoe, Willard Parker, Draper, Detmold, and others. At a cheap boarding-house on Lexington Avenue, he met Dr. Wesley M. Carpenter, a medical stenographer of great skill, who knew all the New York doctors, and had worked some at pathology. Carpenter urged him to go to Dr. Delafield at the Roosevelt Hospital and do practical work. This he did, and was given a table in the little laboratory where Dr. Delafield came every afternoon, donned his black skull cap, ticking apron, and pipe, and cut and stained and studied sections. It was in this tiny laboratory that Delafield concocted the haematoxylin solution so well known under his name. This Prudden later introduced into German laboratories where also it became popular as Delafieldische haematoxylin. He regarded the three months' work in New York under Dr. Francis Delafield as of the greatest value in shaping his career.[7]

The money for this effort to find in New York newer and better knowledge than Yale afforded at that time came from a legacy of one thousand dollars, his Grandfather Johnson left to each of his grandchildren. It was so carefully used that it served also as a nucleus of the fund that later took him to Germany, the "medical center of the world." The six years of steady work that lay between the slowly awakened desire to study at all and his medical degree had revealed the calibre of his mind and made his ability and progress a matter of pride and satisfaction to his brother Henry. But there was a sturdy streak of independence in Dr. Prudden, which made him economize to the last degree rather than call any more than was absolutely necessary upon his brother. He knew exactly what he wished to do, but he recognized that he was in no position financially to devote himself to medical research, and that it was wise to become thoroughly fitted for medical practice. He, therefore, welcomed the opportunity to have a year of experience as interne at the New Haven Hospital. He and Dr. Thomas H. Russell alternated between surgery and medicine, each having six months.

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[7] Autobiographical Notes.

Drs. Farnam, Bronson, and Smith were the chiefs of the service at that time; Dr. Francis Bacon was the leading surgeon of New Haven. Dr. Carmalt had just come. There was at this time no laboratory at the hospital for clinical tests and Prudden brought his New York experience to bear on a little urinary and other primitive analysis place in a tiny room at the west end of the basement in what was then the new wing of the hospital.[8]

The training-school for nurses had but recently been established, and judging from the testimony of some old letters, he seems to have inspired in the nurses some interest in the microscope, in botany, and also in evolution. The superintendent of nurses of that time wrote him on his departure a letter of thanks for his "unfailing kindness and patience"; his "earnest sympathy and interest in their work; his constant teaching by the bedside; and the valuable lectures and illustrations he had given from time to time." We find that what were lifelong characteristics were even then in evidence from an allusion to his "quick perception of circumstances, and what was the right thing to be done then and there, and in his nice adjustment of the detail of the work."

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[8] Autobiographical Notes.

An unusual gift at about this time was of the greatest help to him. Dr. George Farnam, who was the possessor of a fine and expensive microscope, became, unfortunately, a hopeless invalid, but evidenced his interest in the young man who was eager to work in the line that was barred to him by presenting to him an instrument of a type that would have been impossible for him to secure until many years later.

He went abroad for study in 1876. His means were limited, but no one knew better than he how to seize the essential and let the unimportant go by unregretted. A second-class steamer passage and a few months in the little town of Blankenburg to add good colloquial German to his previous study, made but small demand upon his finances, and led to a winter of satisfactory work under Arnold in Heidelberg. Up to the time of the Great War he was in receipt of friendly letters from his Heidelberg landlady, written in neat German script.

A letter written at Heidelberg, in November, 1876, gives a hint of his thought of the past and his outlook toward the future at that time. George Hawes worked in his own line that year both at Bonn and Heidelberg.

Would you like to know what I did on Thanksgiving Day? Of course you would. The old days are over when I used to stand about at Grandfather's, always in the way, watching the heating of the old brick oven, and the fashioning of the pies and puddings and tarts. I never went to church and how long it used to be before those beasts, birds, and fishes, and all were ready to come out of that mysterious oven, common enough on ordinary days to hide the skillets and gridirons, but Thanksgiving Day its yawning depths had undergone a sort of spiritualization, which no boy's faculties could comprehend, and I would as soon have dared to open and rummage in Grandfather's cupboard, in the actual presence of that austere personage as to have carried my investigations of the brick oven on this day beyond the iron door where a peep through the damper showed the glare and glow of the well-seasoned wood that was heating it. Even this peep was not without danger, for one day as I was indulging in it, Grandmother was finishing the chicken pie and I thought myself quite safe. All at once the nicely balanced round damper fell with a crash, which brought the good grandmother from her pie and sent me leaping into a corner where on her arrival I was piously engaged in reading the Bible, the only book which happened to be in that place. I remained unsuspected, and the good lady said that a burnt end of a stick must have fallen against the damper. She was the most indulgent old lady in the world and would hardly scold a thieving cat, but the Thanksgiving Day oven was one of the things which she insisted on managing herself. But this was in the old times and not 1876; America, not Europe, and at 5 P.M. I had one thing at least to thank the Lord for, namely, a successful and satisfactory day of work. George and I planned for an extra dinner at our usual place at six, and I sallied out for a walk in the fast-gathering twilight. My way led me out under the mountain. Striding along in my usual R.R. fashion, I looked up at the group of old ruins faintly outlined against the darkening sky, and thought of all the merry times and sad times those old walls had seen. Many and many a young stranger had in those far off times, like myself, sought this charming valley as his life training school, but with what different aims and with what widely separate methods! He came with lance and horse in gay and gaudy dress to put himself at the service of some of the famous princes whose courts peopled these heights; to learn manners, gallantries, obedience, knightly courtesies. His aim was reached when he was struck a knight in the old church below in the valley. I came only to spy out the workings, the genesis and growth, of little insignificant organisms, whose very existence these old knights were ignorant of; and had they not been, they would have utterly ignored them as wholly unworthy of their attention. The comparison suggested a world of thought in which world I was lost until I was brought back by a persistent pat, pat, pat behind me. I turned and saw one of those comical and earnest little maidens one often sees in the country in Germany. A bright round face, fat hands, and a huge pack on her back, trudging along as bravely and cheerily as if it was not night and a dreary country road. I greeted her and we walked along together. Her simple prattle delighted me and her naive questions were charming. "Had I parents, and why did I leave my mother and sister to come to Germany, and did I know Susie Clark, who went to her school and was from America?" She told me all about her little brother and her father and mother and what a good time she expected to have at Christmas, and when I asked her if she was not afraid to walk so far in the dark every night, she said, "Oh, no, I have not done anything bad." I had to leave her to trudge on alone as I knew already that George was waiting for me and I gave her a little piece of money for "zucher werk" for the Christmas tree and turned back. We ordered a bottle of fragrant wine in honor of our friends at home and enjoyed our dinner as wanderers might whose hearts were filled with old remembrances. . . . Over my trusty pipe I let my mind wander at will until the chimes in the town below startled me by ringing out at midnight. The morning found me hard at work again.

He enjoyed an inexpensive walking tour in Switzerland with George Hawes that summer. The two friends had about the same financial limitations, and part of their fun was to see how cheaply they could do it. Prudden wrote his mother from the top of the Faulhorn that they were having a "jolly time" and were "marvellously hearty." They went over the finest part of Switzerland, stopping "at the simplest inns we can find." Then he went down to the Italian lake district "just to see what one can do in two weeks who doesn't know a word of the language." His real object was to be of service to his brother Henry and his sister, who joined him there for an Italian tour. It was characteristic of him to prepare himself in order to make the brief time they spent together cover the most important sights with a minimum of fatigue and trouble. He gave six weeks of unalloyed pleasure to his companions both at the time and in the retrospect of the years since. From Venice they came over the Brenner Pass together, and he left them at Innsbruck for Vienna where he wrote to his mother, "I could not tell you what a fine time I had all through the trip with H. and L. nor need I say it was a sort of grind to have to leave them." He was in Berlin by the end of that year, 1877, and wrote of arrangements that gave him opportunity to see a great deal at clinics and said: "I find living in Berlin cheaper than any place where I have been yet. If it were not for the books which it seems necessary to buy, I should almost seem to be making money and not spending it, so little do I have to pay for vittles and drink."

It is doubtful if he spent more than $1200 on the two years' fruitful study abroad, and he came home with the flowing beard of the German savant, which disguised for a time both the pallor and the thinness of his face.

A PIONEER PATHOLOGIST

Decision to go to New York—Dr. Northrup's Reminiscences—Influence of Scientific Study Abroad on Early Writing, by Dr. Flexner—Scientific Estimate of Work, by Dr. Hektoen—Lecturer on Normal Histology at Yale—Death of Dr. Hawes—Medico-legal Work—Study with Dr. Koch—New Laboratories—Writings—Death of his Mother and Brother.

WHEN Prudden came home from Europe, full of enthusiasm to introduce into the lore and training of medicine the laboratory and special research study and teaching of normal histology, pathology, and pathological physiology, as related to medicine, with all of which he had been especially engaged in various places during his two years abroad, he was chagrined to find none of the authorities at the several medical schools whom he consulted and the few leading practitioners of medicine with whom he talked, seemed to care about these things as special subjects of knowledge or training. There were chairs of pathology and the practice of medicine, but no chairs of pathology as a special practical theme, and no one saw any occasion to establish them. . . . Thus it was that after vain efforts to get a place to work at pathology at any of the medical schools, even as a volunteer, Prudden finally came back to New Haven, opened an office and started to practice.[1]

NO time was spent in regrets that there was no opening for the special equipment for which he had so enthusiastically prepared. His family, except his brother Theodore, was again settled in New Haven, and he was favorably known there. He, therefore, decided that it was the best place for him to enter upon the long road of acquiring by medical practice a sufficient competence to enable him to engage later in research.

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[1] Autobiographical Notes.

> Professor Sanford of the Yale Medical School had given him fair assurance that there would presently be a place for him there. He was assigned to a small clinic, and private practice opened auspiciously with one transient pay patient, a guest at the New Haven House, near his office, who was assisted by the new doctor's skill to get off to New York by the midnight train. This two-dollar fee was later framed and hung in a modest laboratory as a unique. A dozen or so non-paying patients completed the list of his achievements in the art of healing.[2]

Doubtless the record is as good for his first month as that of many a successful practitioner.

The following letters led to what Dr. Flexner calls "the momentous decision" to leave New Haven and cut himself "adrift from his old associates and a modest living" there. Dr. William H. Welch had graduated from Yale College two years before Dr. Prudden, but they were not brought in contact with each other until Dr. Welch, perceiving the value of chemistry for the study of medicine, went back to New Haven for an intermediate year at the Sheffield Scientific School and the Yale Medical School.

> When Welch entered the laboratory, Prudden was already there, filling a kind of voluntary instructorship; and thus the two men whose paths were to cross and recross in the many subsequent years of sympathy, perfect understanding and common endeavor, first discovered in each

[2] Autobiographical Notes.

other, albeit still in embryo as it were, that devotion to science and its ideals which as the years lengthened was to prove secure against the many and insistent allurements and pecuniary rewards of medical practice.[3]

Evidently, neither Dr. Welch nor Dr. Delafield knew just where Dr. Prudden was located in October, 1878, which is the date of the following letter from Dr. Delafield enclosed in a longer one from Dr. Welch.

From Dr. Delafield to Dr. Prudden.

I am afraid there is but little chance of this reaching you. We are at last to have a laboratory in the college for histology and pathology under my direction. I would like to have you for my first assistant. Will you come and talk to me about it?

From Dr. Welch to Dr. Prudden.

New York, October 9, 1878.

A few days ago Professor Delafield told me of the following scheme which the Twenty-Third Street Medical College has on foot. A laboratory for histology and pathology is to be established in connection with the college, by means of a fund given for the purpose by the alumni. It is to be taken hold of in an earnest way, for the laboratory is to hold the same relation to the college as the dissecting room does; that is, each student will be obliged during some part of his course to work there before he can take his degree. Dr. Delafield proposed that I should go in as his first assistant and have charge of the histological department, and assist him as much as necessary in the pathological part. The salary was to be five hundred dollars for the first year, and I believe more subsequently. I was naturally delighted with the offer and thought it to be just what I wanted, an opportunity to work in the direction where I had studied most. Upon speaking of the matter, before coming to a decision, with some of the professors at Bellevue, I find that they are reluctant to have me leave there, and even represent it as not the square thing for me to go at present. The latter motive especially has influenced me to stay, as I do not believe it pays to do anything unfair. I feel as if I were relinquishing a great opportunity and do not see any equivalent for it at present at Bellevue, but as there is a feeling there that it would not be right for me to leave, I am going to stay and have so told Dr. Delafield. He asked me if I knew anyone who would be competent for the position, saying there are a great many in New York who think they are, but few who really are.

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[3] Biographical sketch of Dr. William H. Welch, by Dr. Simon Flexner, *Science,* November 5, 1920.

I immediately suggested your name and he at once seemed pleased, and deputed me to hunt you up by a letter and communicate the proposal to you. I really think the offer an advantageous one; in fact, presenting an opportunity better than any other I know for one with the tastes and resolution which you have formed. I do not know anyone who could do greater justice to the work there than yourself, and it seems to me to present great possibilities for the future. Personally, I should like to have you here in New York, for I fear I am going to rust out unless I have someone to talk with and help me on concerning the subject in which we are both interested.

I do not know whether this letter will even reach you. Will you at least drop me a postal card when you receive it, for if I do not hear from you in a day or two, I am going to resort to further means of hunting you up. I should also like to know how you decide.

The following are drafts of two replies to Dr. Delafield: the first, written on the evening of October 16, at 35 College Street, New Haven; and the second, which was actually sent, at the same place after a night of "sleeping it over."

From Dr. Prudden to Dr. Delafield.

It is with great regret that after carefully considering the offer which you made me I find myself unable to accept it. I appreciate keenly the advantage it would be to me in my scientific career and the pleasure I should have in working with you. Pecuniary considerations alone compel me to decide thus. I am under such obligations in this respect that I think I should not be justified in assuming the risk which the transference of my residence to New York would involve.

With many thanks for your kindness and deep regret at the necessity for this decision.

October 17, 1878.

I have decided to accept the position which you offered me. I should like to hear as soon as convenient how soon you would like me to come down.

Dr. Prudden ascribes to "the spirit of adventure and the lead of a strong impulse of devotion to the advancement of science" the difference between the first letter ready for posting at night and the second sent in the morning. He had a pretty clear perception even then of the strict economy that would be involved for some years in the small pay and uncertain advances of such a position, but it was in the line of his hope and ambition, and he never gave up anything he wished to accomplish because there was hard work or sacrifice involved. A curatorship of $250.00 soon added a little to the stipend.

THE personal reminiscences of W. P. Northrup, M.D., furnish a picture of Dr. Prudden in the late seventies.

Passing the memorial bridge at Milford, Connecticut, one sees on one side a large cornerstone bearing the name of the Reverend Peter Prudden; on the opposite side, among the less conspicuous, the name of Joseph Northrup. To quote from a published genealogy: "Joseph Northrup, in order to be with his beloved pastor, Rev. Peter Prudden, migrated with him to Milford." Dr. Prudden was fond of referring, in a quizzical way, to the fact that the Northrup stone was not polished. Furthermore, he would refer to alleged records that the Northrups were not "in church following," but being popular in the community, "their name appears in the list immediately after the free-planters," and they were allowed to vote on certain civic matters. This whimsical attitude was characteristic during forty years of intimacy.

The Pruddens came from Yorkshire, England, as did the Northrups. When the Pruddens split off from the New Haven colony, the Northrups went with them to Milford. This was in 1638. Dr. Prudden and I graduated from our several colleges in 1872, came to New York to study in 1876, met first in Roosevelt Hospital in 1878, were working in the laboratory together in 1880. I was the first private worker under Delafield and Prudden. Our intimacy began when Dr. Prudden suggested that I go with him to the International Congress at Copenhagen. I went on ten day's notice. Dr. Prudden and I crossed the ocean three times together; we toured in Brittany, tramped in the Alps, rode mules in Arizona, slept on the floor of the Grand Canyon. In his invalid years I was with him day by day; when he passed away I was the first to get to his side.

Granted that a college senior and a hospital house-physician are at the pinnacle of human pride and self-consciousness! Such a house-physician stood by the dissecting table at Roosevelt Hospital in 1878, while Dr. Delafield, the silent and dignified, made an autopsy on a medical case. At the foot of the table there appeared from an inner room a tall, thin, pale, stiff figure in a black dissecting gown. A stranger stepping to a place in the front row seemingly assuming a place with the consent or tolerance of the operator! Who was this? Dr. Heineman seemed to know him and bowed rather respectfully. "This is the new assistant." "What has he to recommend him to assume so prominent a place in the front row where only house-physicians and professors dare to tread?" "Who is he?" "Why, he is so and so," and here followed a flow of encomium from Dr. Heineman which made some impression (not too much) on the house-physician. Long and motionless stood the stiff figure in the stringy, shapeless black gown and skull cap. Here hinges the story, and here were the beginnings of a long acquaintance.

The memory of the struggle of the early days of the laboratory is clear and distinct. Day after day, sometimes staying late, I breathed the atmosphere, absorbed the conversations, shared the hopes and the discouragements. There are some who read this who will understand the struggle. If I am the only survivor to add these notes, by so much am I bound to record them as I recall the incidents. After a period of forty-four years I am stirred by the same emotions.

As we look back, we see Prudden, a young graduate of

Yale, trained in a school of science, showing from the first a fondness for botany, chemistry, deep-sea dredging, fossil-hunting. After studying abroad under various masters in scientific medicine, he caught lasting inspiration from Arnold and Virchow, and started on his career of pathology. He came to New York to offer his services in teaching his favorite subject, in any capacity, for any salary—for nothing, if necessary. Nobody wanted his wares. A proprietary college, a paying investment, had no notion what pathology had to do with the practice of medicine! The faculty turned their heads just enough to hear the word, wondered what it was all about, turned again and forgot it—both pathology and the offer. One man in the great city of New York had appreciation, and sent for Dr. Prudden to come back and assist him in his own work. That was Dr. Francis Delafield. He guaranteed the small salary of the Alumni Association, undertaking at the same time to arouse an interest in others, faculty and alumni. The ostensible purpose was to teach students of the proprietary college this new subject, scarcely recognized as a part of medical education for the practical physician. As I think back over the feelings prevalent at that time, it is difficult to realize the jealousies, the lack of understanding. One thought it infringed on his subject and department—anatomy. Even Delafield allowed it to become only an adjunct to his department. It required the spirit inherited from old Peter Prudden, directed to his purpose by Virchow, to undertake the drudgery and sustain the struggle of those first years.

Almost from the first, however, a few students were interested. In some way it quickly became recognized that there were order, superior technique, successful method, that something new had come into the life of a teaching establishment in New York. It was a poor place to cast pearls. This noble band of leaders of medical thought and teaching grudgingly moved out a paying tenant from the ground floor and installed the laboratory in a long, narrow room over an ice-cream cellar. For this laboratory space the faculty of the College charged for three years an annual rental of $750, and their own students were being taught there at the same time!

Remember that in those days all microscopic sections for class teaching were cut free-hand. After four o'clock, when students and everybody, servants included, had gone out into the sunlight, the director of the laboratory sat slowly cutting sections for thirty-five students for the nine o'clock in the morning class. As I saw this silent man, sallow, worn, cutting and cutting, I saw something difficult to understand, nothing to envy, but something to watch.

While Dr. Delafield was still director of the laboratory, I began work under his guidance. I believe that I was the first private worker in pathology, and that I am the only survivor of the early days. For five years my duties took me almost daily to the laboratory. As pathologist of the New York Foundling Hospital, it was possible for me to add something to the material for study and teaching in the way of fresh tissues. Dr. Walter Mendelson taught a class in urinalysis for a time. This account of the beginning days should not be written without mention of the cooperation of Dr. George C. Freeborn. His name is inseparably connected with the early doings, as assistant and as recorder and publisher of reports. His unselfish and almost unrequited labors did much to float the ship. Then come the names of Ira Van Giesen, Eugene Hodenpyl, "Tim" Cheesman, Koplik, Heiman, and others. Edward Leaming, skilled and ingenious photographer, aided much in the illustration and publication of the reports of the laboratory. His name should be most gratefully added.

In this small laboratory was demonstrated to the students a giant cell. Later two new things were shown, a tubercle bacillus and a Thoma microtome.

The reader may read between the lines that among the older members of the faculty, a young new element had been growing up; that pathology was being recognized as of interest to the practitioner, not alone to the student of abstract science; that a laboratory was a coming necessity to meet the demands of the students; that pathology was worthy to be a department by itself; that it did not infringe on anatomy nor on general medicine; in short, that this study was wanted, was demanded. It was not long before the professors were coming to Prudden for many things, anything concerning many new things, in fact. When Dr. Kinnicutt, competing with Dr. Jacobi, rushed the first doses of tuberculin to the hospitals, it was Prudden who had a pipette small enough to measure the dose. Kinnicutt asked Prudden to count (spare the tale!) the tubercle bacilli in the sputum of patients injected with tuberculin, and then to count them again the next day to see whether or not they had diminished in number. We began to see the great and prosperous coming to Prudden for many other answers to questions. Agnew wished to learn the nature of some of the snips of tissue removed from the sclerocorneal junction. Many a specimen, scraped or cut in any sort of way and with some or no precautions, was landed on his desk without any history and with no promise of any sort of requital. Those who have lived the life will understand.

Readers of Dr. Trudeau's "Autobiography" may recall the pleasant relations he established with Dr. Prudden in his effort to acquire from one who had worked in Dr. Koch's laboratory the ability to recognize the tubercle bacillus. He described the "dingy windows" and "feeble light" of that first laboratory, and said:

"The most curious arrangement was the sanctum of the

Professor. It was reached by climbing up a pair of steps as steep as any ladder, and was a small room perched in the air and partitioned off at a height of twelve feet or more from the laboratory. No doubt in desperation Dr. Prudden had adopted this ingenious method of obtaining a little privacy for the serious pathological studies he was constantly carrying on and which have made his name famous, but it certainly was a queer outfit. It must be remembered, however, that the scientific side of medicine and the experimental method had not then won the all-important place they now occupy, and the pioneers had of necessity to put up with what facilities they could secure from a conservative Board of Trustees who no doubt thought a laboratory an unnecessary and uncalled-for innovation.

"With my card of introduction from Dr. Peabody in my hand, I climbed the ladder and for the first time met Dr. Prudden, who has ever since been a good and most helpful friend to me. Though his striking personality made a most favorable impression on me, I must say he was rather short with me. He no doubt was constantly annoyed by all sorts of applications. Yes, I could come to the laboratory and he would teach me how to stain the tubercle bacillus; I could have one of the microscopes when the class didn't use them; he would ask Dr. Hodenpyl to show me how to make the stains; and that was all. I was bowed down through the trapdoor in the floor, and disappeared down the ladder to the main laboratory. . . .

"At first Dr. Prudden took little notice of me, and I hardly dared climb the ladder and disturb him in his elevated sanctum; but after several days had passed and he still saw me at my microscope, he asked me to show him my slides; and, no doubt, won by my persistence, he sat down beside me and pointed out to me where my mistakes had been. At last I succeeded, and remained that day until late, repeating my attempts on different specimens until I was quite sure I could bring out the bacillus on the slides. Like the pilot who, when asked if he knew the harbor, said to the captain he certainly did, for he had been on every rock, my knowledge had not been acquired easily; but I knew thoroughly what to avoid doing to insure success; and now I could return to Saranac Lake, study some of my doubtful cases by this test, and begin to repeat Koch's work in growing and inoculating the germ."[4]

In later years, Dr. Trudeau on coming to town was overwhelmed with invitations from his numerous friends. One thing was sure, however completely his card was filled, he left time for a dinner engagement with Dr. Prudden. Whenever on these happy occasions at Dr. Prudden's apartment it was my privilege to be invited, the talk all through the evening was sure to centre around tuberculosis. To those familiar with the faces of these fellow-workers there will seem a similarity. Nature had refined and refined that type until the intellectual seemed to have outstripped the physical. Neither was robust, but something within each helped him to triumph over physical weakness. Prudden became a strong tramper, Trudeau by heroic endeavor regained a measure of health and endurance; both became eminent authorities in their several lines.

The laboratory workers would not willingly have missed attending the annual meeting of the alumni in the lower lecture room of the college. The Director's report usually ended with this statement: "On the basis of last year's returns, there is this year a deficit of $777.38, which, according to the present arrangements, is very simply made up by a deduction of that amount from the salary of the Director." We who knew the grilling demands of daily free-hand section-cutting, staining, preparations of gross teaching specimens, the long hours in a cell containing many humans, some animals, sinks full of specimen organs, large and small, we, the workers, searched for a friendly and sympathetic look from popular and successful practitioners, with the hope that someone would bring forward an "angel" to give the laboratory a real start and honest recognition. No quick jump sped up the work, but each year added to the popularity of the infant project and created its own demand. Finally somebody got the idea. I do not know how it came about, but the owners of this proprietary institution known as the College of Physicians and Surgeons of New York, voted to demand the annual rental no longer. While the students were still crowding to capacity the cell over the ice-cream saloon, it began to be appreciated that the pale, toiling young man was indispensable to the popularity of the college. Prudden was made his own director. A scholarship was added to the income of the laboratory. Yet for a few more years the same report came before the alumni, with the same ways of meeting the deficit; namely, deducting it from the salary of the Director.[5]

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[4] Quoted by permission of Doubleday, Page & Co., from *An Autobiography,* by Edward Livingston Trudeau, pp. 177, 178, 179.

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[5] Annual Report, 1882-1883.

Number of students in Normal Histology	32
Number of students in Pathological Histology	26
Number of students in Urinary Analysis	29
Number of students who have received instruction in various themes	9
Total number of students	96

There remains a balance of receipts over expenditures of $2024.41. This balance, by the arrangement under which the laboratory is at present conducted, represents the salary of the director; so that the salary of the director having been paid, there is no balance remaining in the treasury of the laboratory.

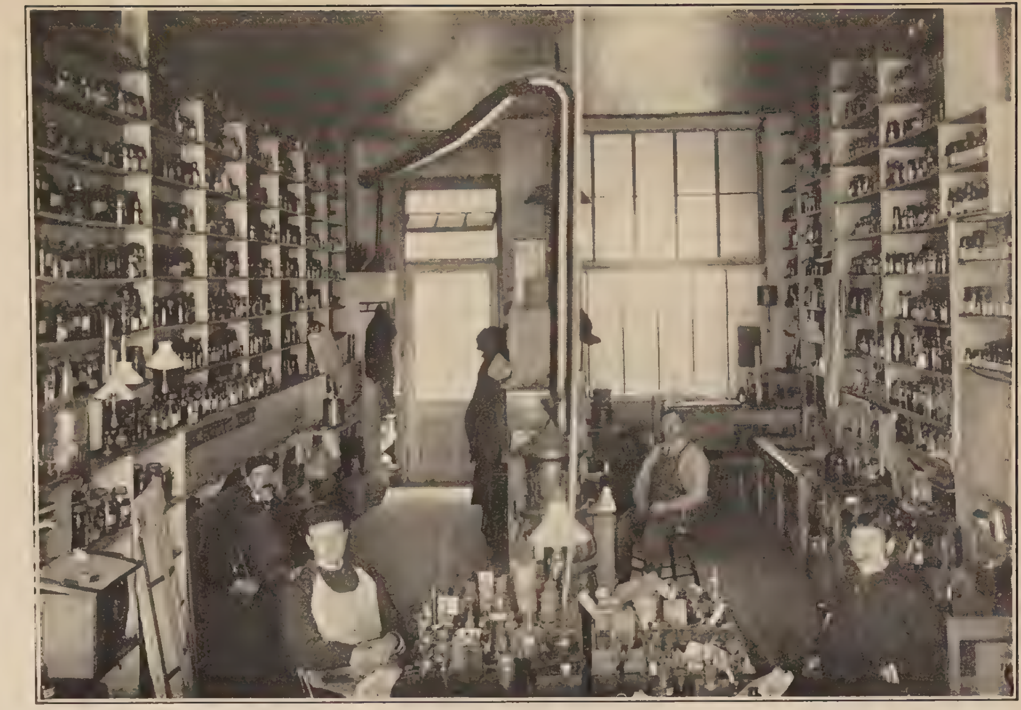
Respectfully submitted,
T. Mitchell Prudden,
Director.

Now we are approaching the time when James W. McLane succeeded in making it possible to remove the college to Fifty-ninth Street, and another story begins; this story is better known. In building the new laboratory Prudden showed his genius for organization. He was a born laboratory director.

When Dr. Biggs returned from his visit to the home of Behring's antitoxin and the production of antitoxin in this country was desirable, Prudden asked for room on the college grounds. Dr. McLane wished to accommodate him, but there was no room. No room for horses to develop antitoxin of diphtheria! There was an animal house for small animals, and in this it was thought one horse could possibly be kept. The horse promptly kicked a goat to death and practically wrecked the plant. "How about the coal house?" asked Dr. Prudden. "It is full of coal, just put in." It was further added, "There is no money to move it." To make a long story short, Dr. Prudden paid for the removal of eighty tons of coal, bought four horses, began injections of toxin, and in a short time had one horse "ripe." At that moment, the importation of antitoxin from Germany was for some reason interrupted, and an epidemic of diphtheria appeared in New York. The horses being developed by Dr. Biggs and Dr. Park of the New York Health Department, were not ready. Dr. Prudden, without any gesture, presented this horse to the Health Department of the City of New York, and later presented the other three. The Department, of course, wished to pay for the horses. When the Tammany politicians were thus helped out in the emergency, they probably little realized that a college professor was presenting them with a gift worthy of a prince of the royal blood. If Biggs were here he could corroborate this tale. I doubt if anyone but Park lives who can. In connection with the work of developing the first antitoxin, it is proper to mention the name of Dr. Charles B. Fitzpatrick, who injected and bled the animals and saw to the care of the animal laboratory. All who contributed to this valuable work were held in grateful appreciation by Dr. Prudden and the friends of the laboratory. In fact, the bond of sympathy between all those early workers was ever strong. Dr. Delafield always so far as was in his power wished to aid Dr. Prudden in his plans, as did Dr. McLane when he came to know and appreciate the work of the pathologist.

No tribute to Dr. Prudden is complete without mention of the distinguished pupils in whose work he had great satisfaction and whose friendship and appreciation were the greatest pleasure of his later years. Among them are James Ewing, William Hallock Park, Francis Carter Wood, Augustus Wadsworth, Matthias Nicoll, Jr., John Winters Brannan, J. West Roosevelt, Walter B. James, John S. Thacher, Charles Norris, David Bovaird, George Tuttle, Rowland G. Freeman, John S. Ely, Alvah H. Doty, George A. Soper, Hans Zinsser.

Dr. Biggs is not included among the pupils. They were associates. Biggs had his own laboratory, but they worked side by side on city and state health problems and were intimates for many years. Would that someone might write the history of the times when Prudden, Biggs, Doty, and Health Commissioner Joseph D. Bryant stood together at the portal and met the incoming ships, cholera infected, trying to solve the problem of quarantine and at the same time calm the panic-stricken passengers and their friends on shore. Some are living who recall those times; a few may remember that a "capitalist" quietly bought a ship on which to separate and comfort the well passengers. Such unpublished ready responses of "Wall Street magnates" were known to only a few. The days were lurid; quarantine was not a science; cholera was down the bay; Biggs and Prudden stood at the gate.



THE FIRST LABORATORY AT 23D ST. AND 4TH AVE., NEW YORK

Left: Dr. T. M. Prudden, Dr. G. C. Freeborn; Right: Dr. Ira Van Giesen; Rear: James Dougherty, the devoted janitor, "Jimmy."

In reciting some of the contacts of our many years of intimacy, I am conscious of the extreme modesty of Dr. Prudden, and I feel bound to a strictly literal description that would tally with what he would allow. "Kernel, draw it mild," he would say. In laboratory and society, in travel, in recreation and in work, I can bear testimony that he was ever the same, never really familiar, always dignified, always clean in language, and kind in criticism. The kindness which he had in store for all his students was wonderful. With his exact and orderly mind he had an amazing amount of patience with the shortcomings of the student. The keen blade of Prudden's criticism and sarcasm might make the student wince, but when once enrolled as a worker with prospects of continuing, he was sure of encouragement, of help of every kind. In sickness he would find another side to his master's character, sympathy and, if need be, financial help.

There are some who think the greatest work of his life was in the cause of public health, or that the crowning achievement was the last ten years when he advised in state health work with Dr. Biggs and Dr. Nicoll. Others will claim that the beginning and advancement of the Rockefeller Institute were the finest glory. So it was; but to me he was from the first living up to the fine finish which was so well recognized in the tributes paid at the memorial services in the great Institute which he helped to initiate, the pride of his later years, the embodiment of his ideals, the Rockefeller Institute.

A PORTION of the biographical sketch, published by Dr. Simon Flexner of the Rockefeller Institute in *Science,* November 7, 1924, covers also Dr. Prudden's early work in pathology.

The lack of opportunity to pursue adequately practical laboratory courses of instruction in the fundamental branches of medical science in the United States led Prudden, immediately after the completion of his interneship, to seek this opportunity abroad. He naturally turned toward Germany and chose Arnold and Heidelberg as his immediate goal. There still exists the letter, dated September 10, 1876, in which Professor Arnold informs Prudden that a place had been reserved for him in his laboratory and that he does not accept fees. He, however, states that a registration fee of about ten marks is required. During the winter semester, therefore, of 1876-1877 Prudden followed the lectures and laboratory courses under Professor Arnold and his associate, Dr. Thoma. Subsequently he visited other medical centers, including Vienna, and worked in other laboratories, returning to New Haven after a period of about two years of study abroad.

In 1879 there appeared in Virchow's *Archiv* the paper, "Beobachtungen am lebenden Knorpel,"[6] which embodied the results of the main laboratory study pursued by Prudden under Arnold's and Thoma's direction. The study is perhaps more significant today than it was at that time. In brief, it represents the endeavor to trace the effects of injurious agencies on living cells while still under control of normal environmental conditions. The fixed cells of the episternal cartilage of the frog were the objects chosen for observation and experiment. A clever device was arranged by which that quite transparent structure could be viewed for hours directly under the microscope, while still in vascular connection with adjacent parts. The chromatin network of the nucleus was discerned and shown to be a preformed structure; variations in cell forms and content, inducible at will, were seen to appear and disappear according to the influences to which the tissue was subjected; the important fact that dissolved dyes do not color the living, but do stain the dead nuclei, was clearly shown, as was the fact that it is particulate, not dissolved dyes, which are ingested by living cells. Just now when the growth of cells *in vitro* is affording so remarkable an opportunity to unravel the intricacies of cell generation and degeneration, and vital staining is clearing up so many dark and disputed questions of cell origin and fate, this early, spirited investigation of Prudden may be regarded as a pioneer undertaking in observing what actually goes on in living cells as distinguished from the inferences drawn of the processes concerned, from the appearance of dead tissues, fixed in chemicals and stained in section. Prudden sums up his findings in the following important paragraph:

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[6] For this paper, he received forty marks.

"But it seems to me particularly significant that it is possible to observe under the microscope, on living cartilage tissue, the processes of contraction and the formation of vacuoles; and that it is possible thus to determine whether and under what conditions such changed cells return to the normal state or whether they undergo degeneration and die. The observations made with reference to the behavior of living and of dead cartilage cells in response to dyes also seem to me noteworthy, because we thus learn that only the nuclei of the latter stain homogeneously. We are, therefore, in a position to distinguish whether cells are dead or living, and can thus exclude their participation in regenerative processes."

. . . .

It was in 1878 that Prudden abandoned the idea of the practice of medicine and adopted the career of full-time teacher of pathology in New York.

Beneath the placid surface of complacence in the medical schools with things as they are, a new movement was beginning to make itself felt. Dr. Welch had recently become established at Bellevue Hospital Medical College in a laboratory adjoining the "dead house" at Bellevue Hospital and was attracting students to his demonstrations and lectures from all three medical schools in the city. This notable success led the Alumni Association of the College of Physicians and Surgeons to propose to set up a pathological laboratory, and Dr. Delafield turned to Prudden, to whom was offered the position as assistant.

His decision, momentous not only for Prudden himself, but, as it proved, for the future welfare of pathology in the United States, was communicated promptly, it would appear, to Professor Arnold, since in a letter from him dated November 15, 1878, I glean the following:

"Your letter pleased me greatly because I am convinced that the position you have assumed will assure you a future. From my knowledge of you, I am, I believe, justified in saying that you will not now easily be diverted from the goal of a scientific career. There is no doubt in my mind that your institute will be a success. The fact that it is small and has only moderate means at its disposal is not important. Some time ago, our German pathological institutes, with the exception of a few, were very bad; now they are being replaced by good ones. But I know from personal experience it is possible to work in even a small institute."

All that Professor Arnold prophesied came true, even to the lean years and the apathy on the part of the older practitioners and teachers in the medical school. But when the College of Physicians and Surgeons was built on West Fifty-ninth Street, opposite the Roosevelt Hospital and adjoining the Vanderbilt Clinic, its chief glory consisted of the splendid group of laboratories, long unequalled, housing the significant department of pathology and bacteriology presided over by Dr. Prudden.

But in 1878-1879, when these beginnings were being laboriously and painfully made, there existed in English no text-book which fairly represented the subject of pathological anatomy as conceived and taught in Europe, especially in Germany. Prudden conceived the notion, even before he returned from his European trip, of translating the brief but excellent work of Perls, and with this end in view, he carried on a correspondence with the author, whose consent he obtained, and then with American publishers, who declined to undertake the printing. From his letter to Professor Perls, ending the series, I abstract the following:

"I have been delayed in writing to you, as I promised before leaving Germany, on account of the tardiness of several publishers in answering my communications.

"I regret to inform you that none of our best publishers in New York or Philadelphia are willing to undertake the publication of the work at present. The times are bad and the pathological works which have been translated have not been financially successful, and hence they are unwilling to assume this responsibility now.

"I regret extremely that it can not be added to our English works at once. I think it possible that it may be done after a time, but at present it seems impossible."

But the large gap which Prudden tried unsuccessfully to fill at the outset of his career with the translation of Perls's pathology he was destined to fill later with a more ambitious and significant work of his own with Delafield. The first edition of Delafield and Prudden's text-book appeared in 1885. As an index of the change in sentiment regarding pathology which had taken place in half a dozen years in America and the standing it came to have may be cited the fact that a second edition was called for within the year. Twelve editions have now been published, each more complete and comprehensive than its predecessor.

There is not a modern student or practitioner of medicine who has not fed on its authoritative contents. Dr. Delafield dropped out of the work as part author after the seventh edition. From the tenth edition on, Dr. Francis C. Wood, a pupil of Prudden's, has cooperated in preparing the new volumes. The work as a whole is a tribute to Prudden's grasp of the principles and the practical details of general and special pathology and bacteriology; and among its distinguishing characteristics are charm of style and precision of language, which only felicity and mastery of English diction could achieve.

The great wave of interest in bacteriology, set in motion by the remarkable work of Pasteur and of Koch, and which broke over the world with the announcement of the discovery of the microbes of tuberculosis, cholera, typhoid fever and of the means of preventing rabies, led to a quick response from Prudden who sensed the part the new science would come to play in pathology and in preventive medicine. Early in 1885, therefore, he planned to return to Germany to study, if possible, under the master Koch himself. That he at once enlisted the good offices of his old teacher in this ambition is shown by a letter under date of March 29, enclosing a note from Koch himself, written by Professor Arnold. Koch's note states that "at the moment it is not possible to accede to the request of Dr. Prudden, as the few available places at the Gesundheitsamt have already been assigned for some time ahead." He adds that "a hygienic laboratory will be opened within the next few months, and I expect to give a bacteriological course there. I would suggest informing Dr. Prudden of this opportunity." Arnold's covering letter to this significant enclosure suggests that a preliminary course be taken with Hueppe in Wiesbaden or Frobenius in Munich. He adds, "I was delighted with your letter, because I gather from it that everything is going well with you, and because you give me the hope of seeing you soon." That Prudden's desire to study under Koch was finally achieved is shown by a paper, written in 1885, in which he describes the method of teaching carried out by him.

"Thus the course in the study of bacteria, of one month's duration, in Koch's laboratory was brought to an end, and the writer can not refrain from remarking that the calm, judicial mind of Dr. Koch—the master worker in his field—his marvelous skill and patience as an experimenter, his wide range of knowledge and his modest, unassuming presentation of his views are all calculated to inspire confidence in the results of his own work, to stimulate his students to personal exertion in this field and to lend certainty to the already widespread hope that ere long through the resources of science we shall be able to cope successfully with those most terrible and fatal enemies of the human race—the acute infectious diseases."

Prudden became, therefore, the instrumentality through which the new bacteriology was brought to New York; research was begun and courses of instruction in the subject were at once offered to students; and the tenets of the new science were made practically potent through the influence which Prudden exerted upon the officials of the city department of health and by a well-considered newspaper campaign carried out anonymously over a period of years. It is no accident, therefore, that the department of health of New York presented itself as well advanced in applying to public health measures the teachings of the new hygiene.

EXCERPTS from a paper by Dr. Hektoen of Chicago prepared for the National Academy of Science in November, 1925, make clear Dr. Prudden's position in medical science.

In 1898, Prudden wrote: "Twenty-five years ago, pathological laboratories were rare in this country, and such as did exist were usually small corners in the 'dead-house' of some hospital which had more enlightened governors or more money than the rest. In the medical colleges, then largely proprietary, pathology was merged in the chair of the practice of medicine. The student could, if he were enterprising, witness an occasional autopsy, but beyond this his knowledge of this fundamental theme was derived from lectures, charts, and books."[7]

In the United States teaching and research in pathology by men especially trained for the purpose and devoting themselves exclusively to this kind of work may be said to have begun in New York about 1878. In that year, T. Mitchell Prudden was appointed Assistant in Pathology and Director of the Laboratory of the Alumni Association of the College of Physicians and Surgeons in New York. The following year William H. Welch assumed the professorship of Pathological Anatomy and General Pathology in the Bellevue Hospital Medical College. This was the first full-time appointment of its kind in this country, and the fundamental importance of pathological anatomy in the medical curriculum was now established. Prudden and Welch are the American pioneers in renouncing medical practice and devoting themselves wholly to teaching and investigation in pathology. "Finally there appeared on the horizon in this country a few anomalous individuals who cherished the notion that the science of disease, even in its etiological and morphological aspects alone, was broad and deep enough to command the exclusive attention of its devotees." (Prudden.)[8]

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[7] "Pathology and the Department of Pathology," *Columbia University Bulletin,* No. 19, 1898 (pp. 103-119).

[8] "Progress and Drift in Pathology," *Med. Record,* 57, 1900 (pp. 397-405).

It was high time for this departure. Since the study of the cell in disease was introduced by Virchow in 1856 (omnis cellula e cellula), pathology had developed rapidly. Due in large measure to German influence and example, the need in the medical course of laboratory work in pathology had become acute. It was recognized, too, that besides clinical and anatomical observation, experimental methods were necessary to progress in research on fundamental pathological problems. And the epochal discoveries of Pasteur and Koch just at this time were bringing in the microbic era with its wonderful progress in knowledge of infection and of prevention and treatment of infectious disease. It was a glorious period for medical science, and in advancing its revolutionary influences on medical education and medicine in this country the subject of this sketch played a leading part.

. . . .

His interest in fundamental medical problems had survived the didactic grind and lack of contact with realities of the medical course of that day.

. . . .

In his absence of two years [abroad] he had mastered German and established friendly relations with several of the leading workers in pathology. "When most of us were serving our novitiate in pathology, the study of inflammation was largely limited to a bare description of visible phenomena and a cataloguing and classification of lesions . . . the more inquisitive among us were much exercised to find out whether it was the emigrated leucocytes or the fixed connective tissue cells which were most concerned in the formation of new cells. So earnest were the advocates of each of these views that the social amenities sometimes suffered. Thus it was my hap to be banished from Stricker's laboratory in Vienna when it became known to that champion of the connective-tissue cells that I had been under the baleful influence of Cohnheim and Arnold."[9] The result of his research under Arnold was published in Virchow's *Archiv* in 1879 (see bibliography). The work deals with changes in living cartilage, a subject of special interest now in the day of vital staining and in vitro study of animal cells. He proves to have been endowed with a high grade of investigative workmanship. The illustrations were drawn by himself. His later work in New York on cartilage transplantation and on the effects of carbolic and salicylic acids on ciliated cells, leucocytes, and vascular membranes is a direct continuation of the study in Arnold's laboratory.

When Prudden returned from Europe, he was eager to introduce into the medical course laboratory work in pathology and to devote himself to teaching and research. In those days in this country the teaching of pathology was done by the professor of the practice of medicine, the exception being Harvard Medical School, in which J. B. S. Jackson and Reginald H. Fitz taught pathology. The authorities of several medical schools and certain leading physicians with whom Prudden discussed the situation did not seem to take any special interest in his plan. While the medical schools may have seemed satisfied with the situation as it was, a new movement, nevertheless, was under way. "Among the most influential real leaders in this movement were Francis Delafield (1841-1915, Yale 1860), a great medical teacher and student of pathological anatomy, and Edward Gamaliel Janeway (1841-1911), one of 'the foremost clinical teachers and consultants of his generation.' These two remarkable men and the brilliant J. W. Southack, who died young, conducted systematic autopsies in New York City for the first time."[10]

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[9] Prudden, "Progress and Drift in Pathology."

[10] Theodore C. Janeway in *American Medical Biographies,* 1920, pp. 610-614.

Through their work in the "dead-house" these men and others, such as Reginald H. Fitz in Boston and Christian Fenger in Chicago, came to learn the changes of disease as the greatest clinicians knew them in the past and as few will ever know them in the future, now that pathology is a separate field of investigation. The following extract from the remarks of Dr. William H. Welch at a dinner in his honor are of special interest at this point: "Dr. Delafield little knew, when he used to give that summer course in pathological anatomy in the College of Physicians and Surgeons of the interest which he stimulated in me at that time. When he came to know me better, he honoured me—and I felt at that time it was the greatest honour that could come to me—by giving me the privilege, in his absence, of making an autopsy at Bellevue Hospital and then permitting me to record the protocol in his own private autopsy book. He little knew the seed he was sowing then, for this certainly was the very beginning of my interest in pathological anatomy."[11]

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In 1876, Delafield was made Adjunct Professor of Pathology and the Practice of Medicine in the College of Physicians and Surgeons in New York (full professor in 1882). In 1877, a fund of $10,000 was raised among the alumni of the college "for advancing the standard of medicine" there, which on the advice of Delafield was devoted to a histological and pathological laboratory. The position of assistant and director of the laboratory was offered to Prudden.

The new laboratory of the College of Physicians and Surgeons was supported largely by the alumni association of the college, the constantly recurring deficits being made up by Dr. Delafield. Evidently part of the money for running expenses was obtained for a time from student fees.

[11] *In Honour of William H. Welch,* Baltimore, 1910, p. 41.

The work started with rather meagerly attended voluntary classes in normal histology. Before long the number of students began to increase. In the meantime Prudden assisted Dr. Delafield in autopsies at Roosevelt Hospital and became a skilled and careful pathological anatomist. Dr. Prudden himself describes the first laboratory as follows: "It was a narrow store on the ground floor, on Fourth Avenue, with a scanty strip of sky just visible through an iron grating, and with scarcely a feature adapting it to the needs of a microscopic laboratory, save that its walls kept out the wind and rain. An ice-cream store on one side and a harness-shop on the other; the clatter of wagons and horse-cars and pedestrians sweeping endlessly along the street in front; the small boy peering curiously between the iron bars of the windows at the strange performances within linked science to the busy world in a fashion truly cosmopolitan. The great brewery wagons rumbling heavily along the pavement set every microscope a-tremble; and the frequency with which microscopic observations must for this reason be suspended, while a severe strain upon the temper of the devotee to science, often left him free to muse upon the important rôle which beer plays in modern metropolitan life."[12]

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Prudden gradually attached to his laboratory a growing group of enthusiastic workers in whom developed the spirit of research and teaching. In addition to their academic duties some of the assistants acted as pathologists to hospitals, dispensaries, and physicians, the compensation for this service being specimens for teaching. During the years, Prudden took an efficient and tactful part in the administrative affairs of the college.

From the beginning of his directorship, normal histology was associated with pathology, largely for convenience in administration. It, consequently, is not strange then that his first publication in New York should be *Notes on the Course in Normal Histology*, which in two years were expanded into his *Manual of Practical Histology*, five editions of which were issued, the last, revised by his assistant, G. C. Freeborn, in 1893. Soon articles began to appear on results of experiments on cells, on observations on a wide range of topics in pathological anatomy, and on the tubercle bacillus and other bacteriological subjects. The need of a textbook was filled by the publication, in 1885, of a second edition called *Handbook of Pathological Anatomy and Histology* by Delafield and himself, of Delafield's *Handbook of Postmortem Examination and Morbid Anatomy* (1872). This book still holds its place as a standard text. The subsequent editions all were revised with special care, and each was more complete and comprehensive than its predecessors. The number of illustrations, most of them drawn by Prudden himself, increased regularly. With the sixth edition, in 1901, the main title was changed to *A Text-book of Pathology*, etc. Dr. Delafield now no longer shared actively in the revisions. In the preface to this edition, it is stated that it has seemed wise now to dwell on the relationships of pathology to the allied phases of biological science and to view pathology as one aspect of the diverse manifestations of life and of energy, rather than as belonging to a special and exclusively human domain. The eleventh edition (1919), the twelfth (1922), and the thirteenth (1925) were revised by Francis Carter Wood, one of Prudden's pupils. The success of the book rests on the clear and precise grasp of the principles as well as the practical details of pathology and the polished and lucid language.

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[12] "Pathology and the Department of Pathology," *Columbia University Bulletin,* 1898.

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As soon as the announcements of the discoveries in infectious diseases began to stir the medical world, Prudden partitioned off for bacteriology a small corner of his dark and crowded laboratory with second-hand glass sashes, the wreckage of a livery stable. So small was this apartment that the worker standing at his table with its twilight illumination could touch the walls in all directions, while at frequent intervals he must beat a hasty retreat for a breath of fresh air. This was one of the earliest bacteriological laboratories in this country.

Koch reported the discovery of the tubercle bacillus, March 24, 1882, and 1883, Prudden published two articles on its demonstration in tuberculous lesions. He soon planned to return to Germany to work, if possible, with Koch. In May, 1885, he was requested by the Connecticut Board of Health to make a report on the application to health work of recent developments in bacteriology, and accordingly he spent two months in Koch's and Hueppe's laboratories. In his report Prudden urges upon the Connecticut Board of Health the appointment of a bacteriologist by the board and the establishment of a laboratory for examination of water, milk, food, and for research, on a plan similar to that of agricultural experiment stations and he suggests that possibly the laboratory might be connected with some existing institution like a medical school. The purpose of the laboratory was to serve as a center of control and research. This surely is one of the earliest definite plans for a bacteriological laboratory in connection with a board of health. In the same year of 1885, Timothy Matlack Cheesman began to give instruction in bacteriology in Prudden's laboratory; and, as stated, research was begun even earlier. The influence of his researches was broadened by instructive popular writings on the relations of water and ice supplies and dust to health and disease. His booklets, *The Story of the Bac-*

teria (3 editions), *Dust and Its Dangers* (2 editions), *Drinking-water and Ice Supplies and their Relations to Health and Disease* (2 editions), carried welcome and timely information to a much wider circle of readers than merely the medical group. Their style is simple and delightful; they were read eagerly; and served effectively in spreading the knowledge on which public health, hygiene, and the modern diagnosis and treatment of infectious diseases are based. Particular mention must be made of his work on the bacteriology of ice because of its importance as the pioneer groundwork that insures the supply of sanitary ice. He made extensive studies of the bacteriology of ice and demonstrated the necessity of the control of ice fields and of artificial ice, thus contributing largely to the solution of the ice problem.

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The report by Prudden, Biggs, and Loomis, pathologists to the Board of Health of New York City, on the nature and mode of spread of infection in tuberculosis, and the memorandum of its acceptance in 1889, constitute a landmark and a point of departure in the campaign against tuberculosis. The report, recently reprinted because of its historical importance, is a brief and comprehensive statement of principles then new, the crucial point being that tuberculosis can be prevented—it is not directly inherited and is contagious. Of this report ten thousand copies were distributed. In 1892, Hermann Biggs, whom Prudden characterized as "wise in counsel, ready in service, a good comrade," became director of the newly organized diagnostic laboratory of the Health Department of New York City, one of the earliest of this new kind of laboratory.

In the meantime, more and more attention was devoted to bacteriology by Prudden and his co-workers. Important details in various infectious diseases were worked out.

With his assistant, Eugene Hodenpyl, the genesis of the lesions of tuberculosis was studied extensively, and they were able to show that the tissue may react to the presence of dead tubercle bacilli by forming typical tubercles. Prudden further demonstrated that cavities may be developed in the lungs of rabbits by injecting tubercle bacilli through the trachea into the lungs, where they would set up a caseous broncho-pneumonia, and then injecting streptococci later. He produced malignant endocarditis experimentally, and studied bacteriologically the etiology of pleuritis and influenzal pneumonia.

Soon after the announcement of the discovery of the bacillus of diphtheria, Prudden, in 1889, published the results of a careful bacteriologic study of twenty-four asylum and hospital children with throat infections resembling diphtheria. Only streptococci were found, and those in such numbers that he regarded them as the causative factor in the group of cases he had studied. Subsequently, it was found that these cases taken as a series should not have been regarded as typical instances of primary diphtheria, but rather as a mixed group of membranous throat infections secondary to measles, scarlet fever, and other diseases. The momentary confusion in regard to the causative rôle of the bacillus of diphtheria that resulted from Prudden's report was dispelled completely two years later when he published the results of further studies of diphtheria that led him to the conclusion that the name diphtheria should be applied exclusively to that acute infectious disease, usually associated with a pseudomembranous inflammation of the mucous membrane, which is primarily caused by the bacillus called Bacillus diphtheria by Loeffler. In the meantime he had found, with W. P. Northrup, that in seventeen children dying from diphtheria complicated with pneumonia, streptococci were present in the lungs of all save one. The results of this work on diphtheria served to make clear the dangerous rôle of streptococci as secondary invaders. Prudden also dipped into immunology and was one of the first to study the germicidal action of serum.

During all these years, hundreds of medical students later going into the various lines of medical service, came under the immediate influence of his high ideals of life and scholarship.

Dr. E. O. Jordan, professor in the University of Chicago, writes:

"I spent the month of October, 1888, in Dr. Prudden's laboratory. His energetic, genial personality dominated the whole place. Although my knowledge of bacteriology was exceedingly rudimentary, he gave freely of his time and advice. He told me briefly what to do, then turned me loose and after a few days, probably once a week, discussed results. It was a very stimulating and fruitful experience, and I have profited all my life from even that brief contact."

In 1898, Prudden wrote that the number of advanced workers each year was about twenty. At that time a special library was supported by the workers in the department, and about seventy-five periodicals were received regularly. From 1890, volumes of reprints of the most important articles published from Prudden's laboratory were issued under the title of Studies of the Pathological Laboratory (since 1893, Department of Pathology) of the College of Physicians and Surgeons. At the time of Prudden's retirement, eleven substantial volumes had appeared—an impressive record. He watched over the work in his laboratory with extreme faithfulness, and subjected the reports and papers of his associates to the high literary and scientific standards that he applied religiously to his own productions.

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But that Prudden was not afraid on occasion to stand squarely athwart the current, is illustrated by his defense of the quarantine administration of Dr. Alvah H. Doty whose displacement "under cover of a mock investigation and a prodigious defamatory hullabaloo" he condemned fiercely. He recognized fully the importance of the legal applications of medical knowledge, and urged the promotion of medico-legal science.

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Prudden's initial and personal equipment appears to have been the essential stimulus that directed his life. Ambition for service in science manifested itself early. He looked on the facts with level eyes, indulged not in loose speculation, and loved the lucid honesty of the scholar. The forty-two years in New York were years of splendid and unostentatious service. He was a pioneer leader in pathology and bacteriology. For a long time he was the central figure in the scientific medical life of New York City. And, crowning all, he had the gift of inspiring in others zeal for high accomplishment in seeking new truths.

While the strenuous days of which Dr. Northrup writes were testing the fibre of the enthusiastic scientist, there were those back in New Haven who desired his help in the upbuilding and strengthening of the Yale Medical School. Dr. Carmalt and Dr. James Thacher both worked diligently to this end. Dr. Thacher had been closely associated with Dr. Prudden in common scientific interests and investigations through his later years in New Haven, and was then Professor of Physiology in the Yale School of Medicine, giving himself with unselfish devotion to its development and success.

As the result of the efforts of these friends, in July, 1880, Dr. Prudden received notice of his election by the Yale Corporation to a chair in the Medical School with a salary of $1200. This salary was much in excess of the usual amount, for professors were expected to earn their living as practitioners. The chair was to be designated by the Medical Faculty as "Histology." Although gratified at this evidence of appreciation from his alma mater, he declined because, he said in his letter to Professor Dexter, Secretary of the Corporation, "the College of Physicians and Surgeons, situated in a great medical center, offers exceptionally good opportunities for the prosecution of the scientific work in which I am engaged." Nor would the salary offered give him "that pecuniary independence necessary if I am to devote time and energy to a work the best interests of which would not permit, as would some medical positions, a reinforcement of income by medical practice." His personal desire had always turned toward Yale College as the place where the atmosphere was most congenial for quiet and undisturbed work. Writing to Dr. Thacher, he said, "I should be prepared to make considerable sacrifice to join you in the good work at Yale, and if the proposition had come a year later when the status of our laboratory here, whose success I have greatly at heart, will probably be fully established, I should not feel so fully committed to another year here."

Another proposition soon followed, which was so attractive and feasible, that he laid it before Dr. Delafield, and upon his assent, accepted it. It still offered $1200 a year in salary, but only asked that he go to New Haven one day in the week, when he was not definitely engaged in the New York laboratory, and give courses of lectures in Normal Histology. This congenial contact with Yale and convenient addition to his salary listed him in the Yale catalogue as "Lecturer in Normal Histology." He took the night boat to New Haven on Friday in order to save time. Ultimately, he gave Friday afternoon and Saturday morning to these courses.

In August, 1881, he was called to New Haven as medical expert in a murder case. It involved him in a long legal battle, for it was more than a year before two young men, belonging to a well-known business firm in New Haven, were acquitted of responsibility for the murder of a young girl whose body had been found on the beach at Savin Rock. Dr. Prudden figured prominently off and on throughout this trial. The fact that he was paid so large a sum as $25.00 a day was used by the defense to discredit the testimony of scientific experts. Newspaper accounts of the efforts of reporters to get information are interesting to those who know how natural it was to him to be "polite and attentive, but reticent," or that on the witness stand "The doctor refused to be cornered." The time, inconvenience, and notoriety involved in this Jennie Cramer case were so distasteful to him that he avoided such opportunities for increasing his income, although medico-legal problems always interested him. There are memoranda of the examination of clothing for a trial at Paterson, New Jersey, in 1885, and another, in 1886, at Jamaica, Long Island. He was drawn into the Buchanan trial in New York, in 1883, because he assisted Dr. Loomis in the autopsy.

In 1882, he became Director of the Laboratory instead of First Assistant to Dr. Delafield. His keen interest in the discovery of the tubercle bacillus and his zeal in promoting every measure that would lessen its ravages had a personal as well as a scientific incentive, for in that year he helped his friend George Hawes in a losing contest with pulmonary tuberculosis. Every effort that was possible in those pre-bacillus days was made. He went with him to Bermuda, and established him there for a winter, and "when it was George's fancy to close up his career among the big hills, which as a geologist and mineralogist he had loved to study," he took him out to the Rocky Mountains at Manitou, Colorado, for the end. Dr. Hawes had no immediate family, and all his books and personal effects were left to the devoted friend to whom his death was an abiding sorrow.

There were years of great and swift enlightenment back in the eighties when, under the inspiring genius of Pasteur and the technical insight and facility of Koch and his followers, the dreary gropings of many centuries suddenly ended; and men knew, not guessed, that the great group of sinister maladies which we now call infections are incited by tiny living organisms, gaining in devious ways a foothold on the body, working havoc with its machinery, and setting free a host of subtle poisons in the blood.[13]

It was inevitable that this "enlightenment" found his alert and progressive mind eager to enter every opening, and that he sought an opportunity to work with Koch when he gave his "first general courses in bacteriology at the Gesundheitamt in Berlin, in 1885," "first to the German army surgeons, and after these were through, three Americans were admitted, two of whom were Welch and Prudden." He not only had the help of his teacher, Professor Arnold in Heidelberg in securing this privilege, but through the good offices of New Haven friends, he carried an official commission from the Connecticut State Board of Health "to investigate the method of studying disease germs, particularly those causing Asiatic cholera, as employed in the laboratory of Dr. Robert Koch in Berlin, and in such other laboratories as he might have occasion to visit; and further to report to the Board such observations." Whether or not this signed and sealed commission was of any value to him, the report which he made to the Connecticut Board of Health on Koch's method, published as a monograph to which Dr. Flexner and Dr. Hektoen allude, was his earliest printed entrance into the domain of public health to which he was later to make such valuable contributions.

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[13] Prudden, "A New Outlook in the Conquest of Disease," *Review of Reviews*, January, 1921.

There was real apprehension that season that the cholera might spread from the Mediterranean ports where it had appeared, and Dr. Koch's admonition to his pupils not to carry away from the laboratory living culture of the cholera bacillus at the end of the course led to an amusing incident.

The next morning Welch and Prudden met accidentally at an early hour on one of the bridges spanning the Spree, each, as it seems, seeking secrecy. It developed that each had gone to an apothecary's shop and purchased concentrated sulphuric acid (or was it a saturated solution of corrosive sublimate?), which they had poured over the surface of tube cultures of the cholera bacillus originally intended to take with them to America and that they now proceeded to drop into the Spree. They expected, of course, to see the tubes sink immediately out of sight, instead of which they had the momentary disquieting experience of observing them bobbing up and down as they slowly floated down stream. The guilty pair hurried away just, it is said, as a large *Schutzmann* appeared on the scene.[14]

By 1886, the growing demands of the laboratory compelled the director to relinquish the lectureship at Yale. Six hours a day of practical personal instruction, which was of the most "exhausting nature," besides the time needed for the selection and preparation of specimens, had made skilled assistance necessary. Dr. Prudden reported each year the devotion and enthusiasm of Drs. Freeborn, Van Giesen, and Mendelson, with a plea for a support for them commensurate with the sacrifices they were making. His own salary had grown to nearly $2500, largely the result of private instruction to private workers for which the Director estimated he received on an average less than fifty cents an hour.

A tedious but well-paid piece of work that belongs to the time of "pot boilers" was preparing definitions of medical words for the Funk and Wagnall's *Standard Dictionary.*

A new era dawned in 1887 when the gift of W. H. Vanderbilt to the College of Physicians and Surgeons made possible the new building on Fifty-ninth Street. There was enormous satisfaction to the tireless worker in planning such facilities as he needed for the course he had developed through nine years of devoted service. The college treasury assumed a budget of $7,000 for the department, which secured moderate payment for his assistants and a modest but assured salary for himself.

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[14] Dr. Simon Flexner, "Biographical Sketch of Dr. William H. Welch," *Science,* November 5, 1920.

Although glad to escape from a room long since outgrown, we would not forget how well it has served the purpose of the laboratory during the experimental phase of its existence. In spite of many drawbacks, we have achieved there a really noteworthy success, so that we now enter upon the new phase of the existence of the laboratory, not as an experiment, but as a simple expansion of an established department. We know now just what we can do, and just what we need in the way of space, apparatus, and fittings. In the absence of pecuniary rewards the instructors in the Laboratory have drawn considerable mental sustenance from the indirect testimony to the value of their work, furnished by the sacrifice so large a number of busy students have made to follow courses of study entirely optional. . . . In place of our eight hundred square feet of floor space, we are to have more than six thousand feet. We surrender without regret our one dark room with its barred windows and its few square feet of sky view, a room really admirable only in the multifarious uses to which it has lent itself. A room at once auditorium and laboratory, museum and store room, animal house, laundry and watercloset! There is probably not another equal amount of enclosed space on this planet which has been so completely occupied or put to so many varied and incongruous uses as the now dismantled laboratory of the Alumni Association, and it only awaits its readjustment to the conditions necessary to a ladies' ice-cream parlor to have completed, as it would seem, the cycle of possibilities. . . . We have reached the period when our efforts need no longer be confined chiefly to the instruction of undergraduate students in elementary themes, but can enlarge the scope of our work by more determined and systematized efforts toward the fostering of research, not alone by the official worker in the laboratory but by any competent person who can find time to avail himself of the facilities of an established and well-furnished laboratory.

The session of 1887-1888 was held in the new college building where about one-third of the second floor of the North wing had been fitted as a bacteriological laboratory. This had places for five or six men, and was abundantly equipped. A corner was partitioned off with glass for special culture work.[15]

The following facts about the study of bacteria in the Pathological Laboratory of the College of Physicians and Surgeons are among Dr. Prudden's papers:

Along in the late seventies and early eighties, such conceptions of bacteria as probable incitants of disease as were slowly crystallizing, were incorporated into our teaching of practical laboratory pathology in the form of such staining of specimens as the new uses of the aniline dyes were bringing into vogue.

When Koch's paper on tuberculosis was published, in 1882, tuberculosis tissues and sputum became at once the centers of interest, and were demonstrated in the pathological courses with the practical teaching of the technique. We began cultivating on solid media along in 1883-1884, with such improvised utensils as we could muster.

[15] Report of Laboratory for 1886-1887, by T. M. Prudden, Director.

In the old laboratory the course in practical laboratory Pathology was first announced, in 1885, as embracing "A study of bacteria in their relations to disease." Here the first systematic instruction in bacteriology was given to a few qualified workers, but with meagre advantages in space and equipment. In the autumn of 1887, in the then new building of the College of Physicians and Surgeons, systematic courses in pathology with bacteriology were offered to graduates in medicine and other technically qualified workers. These courses were conducted by Dr. T. M. Cheesman, who had acquired technical training and experience in the old laboratory, and were essentially a duplication of those given, in 1885, by Koch in Berlin. The courses were individual and full.

The laboratory was maintained by the Department of Pathology, and its resources were drawn upon for such instruction in bacteriology as was given as part of the course in pathology to the undergraduate students, which, in 1887-1888, was named a "Course in Pathology and Bacteriology." Later, less extensive but systematic courses were established at the College of Physicians and Surgeons where bacteriology became a required theme in the medical curriculum.

In 1891, the school was turned over to Columbia, and in 1895-1896, two new floors had been added to the north wing of the medical buildings and a laboratory course in bacteriology was for the first time required for students in the first year of their medical course.

A position of recognized importance had now been won for pathology. The ideal for which he had been striving is indicated in his definition of a "skilled pathologist."

A skilled pathologist must know accurately and fully the structure of the body, both gross and microscopic, so that he may be able to determine all the changes in every part caused by disease or injury. He must know and must have had practical experience in examining the various alterations of the body due to disease or to injury, and must know what modern science reveals as to the agencies causing these alterations. For this reason he must have a practical knowledge of germs and their action in causing disease; of poisons, their nature and how they act; of various mechanical injuries and their effects; and of the many social conditions and habits which may lead to disease and death.

A skilled pathologist must have a knowledge of modern chemistry which alone will enable him to recognize various diseases and conditions due to abnormal chemical action and fit him to understand and to apply the many tests by which certain diseases are identified.

A skilled pathologist must be an experienced observer of all the marks of disease and injury in the body and be able to coördinate, summarize, and record his observations in a form suitable for scientific and legal purposes.

A skilled pathologist must have a practical working knowledge of the modern microscope and its applications in pathology.

He entered the second decade of his New York life not only with the encouragement of greatly increased laboratory facilities for further establishing the germ theory of disease now so widely accepted, but with the knowledge that he had made no mistake in choosing scientific medicine as the avenue by which he could best benefit mankind. When he worked indefatigably to support the tactful and persistent efforts of that other skilled pathologist, Dr. Biggs, to lessen the ravages of diphtheria and tuberculosis, he was accomplishing what he had hoped in 1878. The epoch-making report on tuberculosis, in 1889, of which Dr. Hektoen has written is, after the lapse of thirty-five years, just as pertinent in its recommendations as the most modern expert in tuberculosis control could desire.

A letter from Dr. Osler asking if he would allow himself to be considered a candidate for the chair of Pathology in the University of Pennsylvania is undated, but bears evidence of being about this time, and was presumably preserved because the implications were pleasing.

Increased facilities brought constantly increasing numbers of students, and more attention to administrative details on the part of the director was required. Even after the removal to the commodious quarters on 59th Street, he reports himself as meeting situations where he is obliged to "make bricks without straw." In 1891, when the college was formally adopted by Columbia University, the course was designated Bacteriology and Hygiene.

The laboratory no longer needed the support of the Alumni Association, and their money was appropriated for fellowships; the group of eager students who sought advance work could be more satisfactorily accommodated; and they, as well as those who had heretofore borne with him the burden of much work and little pay, were his joy and pride. From all over the country came demands upon the laboratory facilities. An epidemic of typhoid fever in Providence or Spokane, or of winter cholera in Minneapolis, brought specimens for examination in the days when neither municipal or state laboratories had been established. A special report on the water supply of Passaic, New Jersey, is noted among the activities of 1891.

A letter of this time gives an insight into his philosophy in regard to the occasional failure of practitioners to coöperate with pathologists.

> I quite appreciate your feeling in regard to the outbreaks of practitioners when confronted with misinterpretations of conditions. We have all experienced them, and nearly all of us have learned to rate them according to their intrinsic importance. In the long run, one inclined pathology-ward does not, if measurably tactful, suffer from an insistence upon the obvious facts. It is not a new thing for me to hear of practitioners who think lightly of pathologists. That, indeed, is one of the small zests in a pathologist's career, and affords an interesting foil to the remarkable eagerness with which in the long run his results are sought.

During this period of steady work in the laboratory and supplementary undertakings in self-support, he had published forty-five articles in medical journals and two editions of the *Manual of Normal Histology,* while the *Handbook,* which was to remain his *magnum opus,* had been launched, and had had two of the careful triennial revisions, with their constantly increasing wealth of hand-drawn illustrations, that have kept it abreast of developing medical science. A beginning had also been made in the field of popularizing science by the publication in the *Popular Science Monthly,* in 1887, of "Our Ice Supply and its Dangers." The first edition of *The Story of the Bacteria* appeared in 1889; *Dust and Its Dangers,* in 1890; *Drinking Water and Ice Supply,* in 1891.

The necessity for securing increased income was in the beginning the fundamental reason for his adoption of the quiet life which his friends have so much regretted. Neither at first nor later did he have vigorous enough health to accept frequent dinner invitations, attend functions, make addresses, and still accomplish his work. It was most unfortunate, for he was always a welcome guest and a lucid speaker, but he knew his own limitations, and respected them. Public speaking he always avoided, saying there had never been anything in his training or equipment that fitted him for it. Few have ever understood that he became more or less of a recluse from necessity rather than choice, since he felt that the goals that he had set for himself would be impossible if he were to assume family responsibilities or more than a limited number of social engagements. His bibliography accounts for the use of many hours that might have been spent in congenial social contacts but for the same singleness of purpose that led him to New York in 1878. In no small degree, his ability to write and to project himself into the interests and needs of others came from the deliberate cutting out from his own life of multitudinous engagements that divide time into such small segments that there is nothing left for quiet thought or helpful friendships.

His absorption in work did not prevent frequent intercourse with his family in New Haven. He was a wise counsellor, and "Ask Mitch" was the usual formula when problems arose. To his mother through years of declining health before her death, in 1889, he was an unfailing comfort. For many years the Pruddens had a summer rallying place on one of the Thimble Islands in Branford Bay where Henry had built a fishing camp. The small shelter was gradually enlarged, chiefly by home carpentry in which Mitchell was the leading spirit, until the whole family and friends who enjoyed its primitive life with them could be accommodated. There was abundant exercise in rowing, and much sailing, and the few weeks together each year preserved a closer family contact than often happens in mature years. Theodore always came on from his home in the Middle West. An accident to an early morning train in which Mitchell and Henry were going to New Haven from Stony Creek, had given Mitchell, as a young medical student, an unexpected chance to exercise emergency surgical skill and, also, a permanent scar on one hand. The first motor launch seen in those waters was one that Mitchell joined with Henry in purchasing.

In 1890, his sympathy and affection became a tower of strength to his brother Henry, who suddenly came home from a wedding-trip abroad, smitten with mortal illness. It was a sore grief to the man whose life was devoted to medical science that in this emergency he could advise no resource in medicine or surgery to stay the progress of a disease that in a few weeks ended the life of this beloved brother. No detail was too small and no effort too great for Dr. Prudden in the tender and devoted attention he gave the invalid. His resourceful mind suggested many alleviations, and his calm judgment sustained the whole family.

Upon him came the responsibility of settling an estate which involved the disposal of a business and several pieces of real estate and the payment of many residuary legacies to charities. The most minute attention was given to every detail, and painstaking adjustments were planned that the fullest possible value might be realized for every holding. The final settlement was not made until as late as 1911 when the last piece of property was sold. The frequent accountings that went to the Probate Court were models of business precision, and his books show the amount of time that was put into the conscientious effort to carry out his brother's will. That he made no claim for an administrator's fee characterized his attitude then and always toward his family. From this time on he assumed the older brother's constant, thoughtful consideration for his sister, with whom he insisted on sharing his resources in a more than generous fashion to the very end.

WORK IN THE CAUSE OF PUBLIC HEALTH

By Dr. Augustus B. Wadsworth, *Director of Division Laboratories and Research of the New York State Department of Health*

His Personal Researches All Had Bearing on Public Health—Sanitary Conditions—Quarantine—Cholera—Tuberculosis—Diphtheria Antitoxin—Personal and Public Hygiene—Water—Milk—Ice—Public Health Taught to Students—Writings—Disinterestedness.

WHILE Dr. Prudden will always be remembered among physicians as a pathologist, appreciation of his contributions to this science should not be allowed to obscure his services in the field of public health. During his whole life he devoted much time and thought to devising and promoting measures for preventing disease and for improving living conditions. In the early days of his professional career, he personally did an immense amount of diagnostic and routine investigation, all of which directly and indirectly had its bearing on problems relating to the control of the infectious diseases. The practical solution of such problems in public health, as a result of the discoveries in bacteriology which were then, and are now still unfolding, has given the impetus to wonderful achievements in preventive medicine during the past fifty years.

Without discussing Dr. Prudden's many-sided aptitudes, it may be said that he possessed what is seldom found in one individual—a talent for pure research combined with the ability and desire to apply the latest results of scientific investigation to the amelioration of conditions which affect the welfare and happiness not merely of individuals, but of the human race as a whole. Trained in accurate habits of thought and work, he carried the spirit of true scientific investigation, of painstaking attention, into everything he undertook. It was the earnest consideration with which he regarded every subject presented to him that made his judgment and counsel so valuable.

No better argument in favor of training in research as a qualification for the administration of practical affairs need be cited than the influence that Dr. Prudden exerted in matters both of policy and of detail in public health matters. He was familiar with the details involved in all phases of any problem; also, he continually kept in view a vision of ideal conditions, and from his wide experience, and because of his singleness of purpose, he seemed to recognize with no uncertainty in what direction and how far plans for public betterment could successfully move forward. He kept to the last his perennial enthusiasm for scientific discoveries in the field of preventive medicine.

Having recently studied with Koch in his laboratory, the old Institute of Hygiene, in Berlin, and being devotedly attached to the master and enthusiastic over the new methods of investigation, it was natural that he should be keenly desirous of bringing the new knowledge he had gained concerning the etiology and communicability of the infectious diseases to bear upon actual questions of sanitation. The writer, also a student in the course, twenty or more years later saw Dr. Prudden's picture in the old laboratory together with that of his fellow-student, Dr. W. H. Welch. It was the tradition of the Institute to hang the pictures of each class.

Upon Dr. Prudden's return from Europe, in 1877, and his important decision to devote himself to research and to laboratory work in pathology and bacteriology, rather than to the building up of a medical practice, he identified himself with the cause of preventive medicine and public hygiene, and soon became recognized as a leader by those with whom he worked.

We have abundant records to show that he heartily and actively took part in all movements directed toward the improvement of sanitary conditions in New York City. Besides his teaching and his individual research problems in pathology and experimental immunology, he found time for an almost incredible amount of related work. We find that he served on innumerable committees for inspecting public health conditions; he attended meetings and conventions; he was consulting bacteriologist for the city health department; a member of the Board of Scientific Directors of the Rockefeller Institute for Medical Research, of the International Health Board, and, later, of the New York State Public Health Council. He seemed to be called upon for every sort of task. He submitted reports to city and other officials, drafted bills to remedy flagrant abuses, prepared resolutions, framed amendments for the sanitary codes of the city and of the state, and wrote many editorials for the leading New York newspapers. Sometimes he denounced a state of affairs dangerous to the health of the community; at other times commented favorably from the point of view of a shrewd man of affairs upon some good piece of legislation which he had been instrumental in carrying through to the benefit of the city, perhaps suggesting further action along the same line. On occasions he was appointed as representative of some scientific or municipal body to appear before the United States Senate or the Legislature in Albany to offer a formal protest against the passage of some bill inimical to public health.

Dr. Prudden's name will always be associated with those who did so much to prevent the spread of cholera in New York City during 1892. He was the leading spirit in the National Quarantine Committee of the New York Academy of Medicine, and prepared a report of the quarantine conditions at the Port of New York in which he urged stringent precautionary measures. The danger from cholera, which threatened the country, in 1892, called for the utmost vigilance on the part of the Department of Health. It became necessary to enlist the help of medical societies and to utilize every other available means to avert the menace. During the ensuing excitement, Dr. Prudden was engaged with others in the important work of devising effective quarantine measures, of inducing the municipal and other officials to pass adequate regulative laws and to appropriate money for needful purposes. In addition, he was active in advising and encouraging the chief of the quarantine station at the Port of New York. Later, as the station was in continual danger from political interference, he widely advocated the federal control of all quarantine stations. In 1893, he framed a bill to create a Bureau of Public Health in the Treasury Department at Washington.

In the midst of his other activities, he took pains to write a simple, readable article on the prevention of cholera for a popular "family paper." He explained the nature of the disease, how the infection was incited, how the germ was transmitted, and so forth; and ended by saying there was slight reason for alarm if general sanitary principles were followed.

His sympathy with, and his understanding of, the daily problems of the ordinary folks who make up a community enabled him to provide accurate information in acceptable form for the lay public. While not in the least lowering scientific standards, he was always able to see things from the point of view of the average person. For instance, in one place he has stated what he considers to be the qualifications for a quarantine officer, which are many and exacting: but finally, "the ideal quarantine officer will be informed and determined enough to follow the dictates of modern science, but wise and humane enough to do this with the least possible interference with the comfort of passengers and the interests of commerce."

Dr. Prudden during his entire professional life used his best efforts to check the spread of tuberculosis. As the result of much agitation on the subject, the city Department of Health requested its pathologists "to formulate a brief, comprehensive statement regarding the communicability of tuberculosis in man, stating therein evidences of the same and recommending in the briefest possible manner the simplest means of protection from its influences." The investigation was made, the report prepared, and Dr. Prudden as consulting pathologist to the Health Department framed a resolution which was adopted as an amendment to the sanitary code of the city.

During the inquiry, continued publicity was given through the newspapers to the action taken by the health authorities, and it led up to a widely heralded announcement, which stated that "The Health Board yesterday made public what is probably one of the most important reports it has ever received. It dealt with the prevalence of consumption in this city and the measures which should be adopted for its prevention and cure. . . ." Then followed a summary of the facts given in the report and the recommendations for controlling the disease, signed, "Hermann M. Biggs and T. Mitchell Prudden, Pathologists."

Much enthusiasm was aroused everywhere, and various further possible measures of control were suggested, but although an ardent advocate in any cause for the improvement of the public health, Dr. Prudden was averse to measures for betterment which were likely to arouse opposition or which were for the time being impracticable. This wise caution on his part is illustrated by his point of view expressed in a general meeting, a "symposium," to discuss further measures of control. It had been proposed to require that tuberculosis be a reportable disease. He thought popular ignorance to be a great evil, and gave his views on the subject in part as follows: "I am rather disposed to think that at present the wiser thing is to educate the people regarding tuberculosis, and that this can be done most efficiently and humanely under conditions falling a little short of an absolute compulsory notification; something like the system that has been adopted in New York, perhaps, would be wiser. Notification is requested of all, but is required only of certain public institutions. Aid is proffered to all in diagnosis by bacterial analysis, and disinfection enforced within certain limits. I should hope that if the way were broken by some such tentative plan as this, a surer foundation might be laid for future and more comprehensive action than if we excite undue fear and raise the professional opposition which seems to lurk in the shadows of a medical knowledge gathered in earlier times. I am, however, not actively opposed to immediate compulsory notification of tuberculosis, if it can be done without exciting undue and harmful alarm. I think one's position in this regard is largely determined on grounds of policy, and I am rather disposed to think it wiser to make haste slowly, even at the sacrifice which a partial continuance of the present deplorable conditions involves."

Again in the dramatic story of the preparation and the introduction of diphtheria antitoxin, Dr. Prudden played a leading part. The pathologists were requested to make an investigation into the merits of diphtheria antitoxin and into the details of its manufacture, and to report to the board of health. This they did. The board adopted both reports and the manufacture of the antitoxin was begun. Dr. Prudden was appointed on an advisory board to make estimates, disburse the fund which was being raised by popular subscriptions, and to arrange for acquiring the necessary horses and other equipment. The work was started at the New York College of Veterinary Surgeons at East 57th Street. The Willard Parker Hospital was one of the first to be supplied with the serum. During all this early period, Dr. Prudden was most active; he was continually called upon to discuss and to act upon the best means for the distribution of the subscription fund and the "appointment of a bacteriological staff." He was asked to lend his "great experience in so good a cause and give such advice that the project may reflect credit on all those concerned."

Although at first the prevention of cholera, the whole question of tuberculosis prevention, and the difficulties to be overcome before the people were sufficiently responsive to approve the manufacture and distribution of diphtheria antitoxin—these larger problems—engaged the greater part of his attention, yet anything to do with personal or public hygiene was sure to be of interest to him. Working through the city Department of Health, he called attention to the dangers which might arise from the dissemination of harmful microörganisms. As early as 1888, he made a careful study of the transmission of disease germs in ice, with special reference to the ice supply in New York. Various editorials appearing frequently in the newspapers of the time make such statements as: "Dr. Prudden, as consulting bacteriologist for the Health Department, maintains that ice cut from the Hudson River is filled with bacteria which may cause disease, especially typhoid fever. He states that typhoid bacilli imprisoned in the ice may live for 103 days." Again: "The conditions of the streets are dangerous to health; Dr. Prudden reiterates his statement that the duty of the hour is to clean and sprinkle the streets." Or, "In an interview with Dr. Prudden, bacteriologist of the Board of Health, he says . . ." thus and so—always that some abuse should be rectified. For years he took part in the agitation to obtain a good water supply.

Beginning in 1891, a series of investigations was undertaken to improve the milk supply of the city. The public was kept informed through the newspapers of the danger incurred by the use of impure milk (likely to contain tubercle bacilli) and of the strenuous efforts made by the Department of Health to remedy the situation, and, in 1896, we read:

> The Health Board of New York City has added two important amendments to the city sanitary code; one requiring every milk dealer, wholesale or retail, to take out a license which will be furnished by the Board when he has shown that he is complying with the rules of health. With the power of revoking this license in their hands, the Board expects to be able to entirely prevent the adulteration of milk. The second rule, which was framed by the city bacteriologists, Drs. Prudden and Biggs, requires notices to be posted in all public places warning persons against spitting on the floor. . . . Resolutions forbidding the use of mattings on the floors of elevated cars, the common use of knives, forks, and spoons on free lunch counters, and the roller towels in saloons and restaurants were discussed, but have not been acted upon.

Dr. Prudden's part in furthering our knowledge and in stimulating research in the new science of bacteriology among the students who came under his instruction is told elsewhere; here we are concerned with the influence he exerted in the medical profession and upon the officials of the city and not less upon the intelligent public-spirited men-of-affairs of that period. But here again his efforts to enlighten both physicians and laymen on those subjects that underlie the modern development of public health were preëminently practical and thus sowed the seed in fertile soil. There was always a long, keen glimpse into the future in all that he did. It has been truly said it was no accident that the Department of Health of New York presented itself as well advanced in applying to public health measures the teaching of the new hygiene, and that the first public health laboratory was established in New York City; but few of the younger men in the profession realize the amount of time and the energy and thought which were freely expended by Dr. Prudden in bringing about this result. He spoke and wrote urging the city's needs on every possible occasion, and gradually prepared the minds of public officials to welcome improved methods and, moreover, induced influential persons to aid financially and otherwise in introducing them. Besides the well-planned newspaper campaign carried on anonymously over a period of years, informing, warning, instructing, encouraging readers in regard to needed reforms, he used his most persuasive and beguiling talents in writing on matters of immediate interest to every person in the community; for instance, on the best ways of sweeping and dusting, how to obtain a pure water supply for the household in the country, how to live beyond three score and ten, how to prevent disease. He wrote on these subjects for such magazines as the *Outlook*, the *Christian Herald*, and *Harper's Magazine.*

His unswerving policy in these various activities was, on the one hand, to work for the enlightenment and instruction of persons in authority and to induce them to favor improved methods and, on the other, to build up an intelligent public opinion which should demand these improvements and support those who were trying to introduce them.

While in college, Dr. Prudden won recognition in English Composition, and was advised by Professor Lounsbury to devote himself to writing as a profession. He probably would have succeeded if he had followed this advice, and surely would have gained distinction if he had chosen to write extensively upon purely medical subjects; but he unhesitatingly subordinated his talents as a writer to the purposes of the reformer. He could produce a terse editorial for a leading newspaper, an important report to some official, a resolution to be acted upon, or a simple presentation of some scientific subject—in short, anything the occasion demanded. His popular articles on the communicable diseases are models of what such writing should be. They consist of a presentation of well-established facts in simple, precise, but untechnical language, stating how infectious diseases, and particularly the one in question, are incited, how the agent is communicated to others, what the dangers are in the existing conditions, and what preventive measures should be observed. They end with a few words to the effect that, "The situation is certainly grave, but by no means alarming in any city or town which is in good sanitary condition and whose public health affairs are in the hands of intelligent, competent persons." And the careful, accurate information, the precise instructions for prevention and so on, are lightened and even made amusing by many an apt allusion or judicious pleasantry.

All such public health propaganda reads today like an oft-told tale, for Dr. Prudden wrote thirty or more years ago, yet his ideas on all these matters were far ahead of his time. His views on various phases of sanitary science, carefully and discreetly expressed, have gradually penetrated to levels where they are understood by the public in general. Hope for the successful development of public health service in the future depends upon a close adherence to his far-sighted precepts. Fortunately, by patient, well-directed efforts on the part of Dr. Prudden and of others associated with him, these same principles are now recognized as sound, and many competent, intelligent individuals are earnestly carrying on the work along lines laid down and recommended a generation or more ago.

Since then, the need of widespread education in public health matters has come to be recognized as imperative. Many of the press notices of his small books, *The Story of the Bacteria* and *Dust and its Dangers,* deplore the fact that there is such a lack of authoritative information written in attractive, readable form, and only a few years ago a letter from the Director of the Information Service of the Rockefeller Foundation asks Dr. Prudden if he cannot be persuaded to write some articles on the many significant phases of health work in which the Foundation is interested—"the suggestion was made that no one can excel you in the kind of writing we have in mind. Your article on yellow fever in the *Review of Reviews,* of April, 1920, may be cited as proving the point."

This is not the place to expatiate upon Dr. Prudden's tact and generous, unfailing kindliness. Testimony is unanimous that his abilities were always at the disposal of his associates and co-workers and that his desire to be of service was unbounded. If his duties as professor had been confined to presenting pathology and other medical subjects to the students who successively came under his care, his exceptional abilities as a wise and inspiring counsellor might be omitted from a chapter which emphasizes what he accomplished in the field of public health. But his inherited tendencies, his early home life, the influences of his college days—everything, in fact—conspired to develop the true teacher and leader, familiar with the fundamental principles of the subject in question, and able to select salient facts and present them in a concise, easily understood fashion. All plans for extending opportunities for instruction interested him. At one time he even gave talks to the Chautauqua students, and prepared for them a series of questions on his three small books. From the first appearance of the moving pictures, he welcomed them as an aid to popular education, and advocated their extended use. But the attribute of the genuine teacher which stood out most clearly in all Dr. Prudden's activities was his disinterestedness. He had ample opportunity to make his services in the various reforms in health conditions better known, but he deliberately chose to remain in the background. He apparently was content to see his ideas, sometimes even the expression of them which he had prepared, presented by another worker; and no one appeared to be more pleased than he when some measure which he had advocated was in any degree successful. Writing in 1906, he says that he counted it his good fortune to secure the coöperation of the administration in two large hospitals and in one large educational institution in having the wards and public assembly rooms properly swept and dusted according to sanitary methods. As the years went on, he had the satisfaction of seeing the great progress which had been made in improving and ameliorating the surroundings and safeguarding the requirements for healthful living.

As a result of the busy, strenuous years in helping to introduce correct information in regard to principles underlying the new public health and guiding its development during the first years, many agencies for carrying on the work were well-started. Much remained to be done, but a group of younger men, many of them his former students, were well-trained and enthusiastic, and ready to take their places in the various enterprises already established. Dr. Prudden was quite content to leave the active work in their hands; for he unquestionably enjoyed drawing out the capabilities of his students and junior associates, and whenever possible delegated authority to them. He seemed to know intuitively that he would serve the cause best by helping to formulate standards of excellence and in advising as to ways and means of accomplishing tasks that were attempted. As already mentioned, he was a member of several scientific boards and councils, and found ample opportunity to use his wide experience and sound judgment in an advisory capacity. His well-earned reputation as a man of the highest professional character and ability, together with his known experience and his quite exceptional "wide knowledge of personalities," caused him to be continually called upon as consultant.

This incomplete outline of Dr. Prudden's activities in promoting many phases of public health does no more than intimate the wide extent of his influence. A complete record would constitute a picture of the development of preventive medicine during the last fifty years. Accounts of other eminent workers, varying from brief notes to comprehensive biographies, have appeared from time to time; but the narrative is yet to be written which will weave these separate strands into a coherent whole and give to men of the future a sense of the constructive work done by the splendid group, fortunately some of them still active, who have not only given the tone and guided the development of the science and art of the new public health, but have also indicated the direction for further progress. In this history, Dr. Prudden's character and scholarly and administrative ability will stand in fitting perspective.

THE PROFESSOR

As a Teacher—Testimonies from Dr. Francis Carter Wood, Dr. Haven Emerson, Dr. W. H. Park, Dr. James Ewing, Dr. Rowland G. Freeman—Apartment on 59th Street—Honors, Writings, Public Health Interests—Administrative Problems —Archæology—Rockefeller Institute.

DR. PRUDDEN described himself during this time as "a slave to teaching and to keeping the breath of life in a text book in pathology for successive generations of students and practitioners of medicine." The quality of his teaching is best revealed in the words of those who knew him in classroom and laboratory, many of whom stand in the foremost ranks of active workers in medical science. Among these Dr. Francis Carter Wood, Director of the Institute of Cancer Research at Columbia University, was the man chosen by Dr. Prudden as his successor in the revision and carrying forward of the Delafield and Prudden *Pathology*. He had been first a student, then an assistant, later an associate professor of pathology, and always a valued friend. Dr. Wood allows us the use of the following reproduction of his words at the funeral service.

> There are those whose claim for earthly immortality rests chiefly in their children; others of wider vision find in their pupils the opportunity for transmission to other generations the achievements of their minds. Such a one was Dr. Prudden. He leaves behind him a long line of students of medicine, trained in his methods and carrying on the work which he now has laid down.

Dr. Prudden brought to his task a mind of unusual clarity, polished by contact with the best intellects of this country and of Europe. The newly established chair of pathology in the College of Physicians and Surgeons gave him his opportunity.

In his teaching there was something of a Puritanical austerity, for he did not suffer fools gladly; but to those in whom he saw some capacity for study, some appreciation of the complexities he was trying to clear up, some desire for broader opportunities than the rigidities of the curriculum permitted, he was the most amiable of advisors.

Of a shy and sensitive nature, he did not often unbend to his students nor did he seek popularity by easy and obvious methods; but rather insisted that those whom he taught should see, even if somewhat dimly, the high estimate which he accorded to clear understanding and the necessity for absolute honesty in the appraisal of scientific values. His lectures were models of conciseness in expression, and just as in his writings he was jealous for the correct phrase, the choice of the apt and fitting word.

But the great bulk of his students never saw his most attractive side; that was the reward of those who entered his laboratory to do research or to teach. To us fortunate ones he was the most amiable of companions, the most generous of helpers in our difficulties. He encouraged our efforts in investigation, revised our papers with the greatest care, making suggestions and corrections without number, often punishing some violent infringement of the rules of scientific evidence with a shrewd jest of so searching a nature that we were not likely to err in similar fashion in the future.

The same Puritanical qualities to which I have referred applied to his own work as well as to that of his pupils; quality was always more than quantity. He was also singularly free from that desire for self-assertion, which leads some great men to attach their names to all papers appearing under their direction, and also, quite in keeping with this attitude, he was generous of counsel on matters far outside of the range of his official duties, regardless of any credit to himself.

How large a part, for example, he played in the development of the present multifarious activities of the New York City Board of Health, only those who received and valued his suggestions will ever know.

To the last he retained a singular freshness of mind, an interest in and an unusual capacity to appreciate the remarkable advances which are taking place in the medical sciences at the present time. This interest was shown in the enjoyment which he took in the research work of the Rockefeller Institute and also in his pleasure in looking over the recent revision of the famous textbook on Pathology, *Delafield and Prudden.* Some of the most entertaining and characteristic letters which I have of his are in response to the receipt of the latest edition for which I was wholly responsible. He rejoiced that certain old drawings over which he had spent hours of labor years ago were discarded for new, that chapters had been largely altered to meet changing ideas, that the old book was going on to be useful to the students of a new generation; never a word of regret that his own work was being covered by the flood of new discoveries.

Dr. Haven Emerson of the Institute of Public Health at Columbia University, known so widely for his devotion to the science of public health, accompanies his tribute with these words:

All I can hope to do is to carry on some of the fine traditions he planted in our minds at college and after.

It was always with trepidation that I sought audience with the austere, the reticent, the precise, and clear-eyed teacher who first gave me courage to prepare a statement of observations for publication.

How incisive his questions, how pure the structure of his well-chosen sentences. Ambiguity of thought vanished before his relentless stripping off of muddled words and phrases.

Dr. Prudden led us inevitably to correct personal and courageous public action in all practical applications of his beloved science. He backed us in every new idea or plan which promised to put laboratory science into the service of prevention.

Dr. Prudden gave precious scholarship and distinction to a world which threatened often to smother us in a mass of crudities and commonplaceness.

Dr. W. H. Park, head of the Bureau of Laboratories of the New York City Department of Health, furnishes testimony in regard to the quality of the teaching of pathology at the "P. and S."

My relations with Dr. Prudden began as a student, continued as an assistant, and ended in a life-long friendship.

The course in pathology was optional and was given in a room on the ground floor of the college in 23d Street. My remembrance of Dr. Prudden as a teacher is that he was attentive to all the students but especially to those who showed interest in their work. He taught us to try and study things out for ourselves and to observe accurately and see things as they were and not to guess. He had our deep respect, and we appreciated his friendly interest.

After my hospital experience and a year's study abroad, I returned to the college and visited Dr. Prudden.

The question of the relationship of the diphtheria bacilli to diphtheria came up. This was a subject upon which Dr. Prudden had done considerable work which indicated that the streptococcus might be the cause.

In expressing my opinion that the work I had seen abroad demonstrated that true diphtheria was due to diphtheria bacilli, he asked me whether I should like to come into the laboratory as a volunteer and devote myself in my spare hours to the study of the bacteriology of diphtheria. I eagerly seized the opportunity of working under him, and so entered upon a field of work which became so interesting that I have since continued in it.

I thus spent two happy years under Dr. Prudden's direction. During this time he was always interested in the developments of the problem and was constantly helping me by criticism and encouragement. He taught me to try and weigh to the best of my ability the information that had been obtained, to use my imagination but never to let it prevent me from sifting truth from error, and to aim to arrive at the truth rather than to establish what I wanted to prove.

I well remember the first paper that I wrote and asked him to criticise. He kindly consented. I became rather stirred up over his criticism, and he, noting it, said with a smile, "Park, what did you ask me to do?" I had the good sense to say that I had come to him for criticism. He remarked "Well, am I not giving you what you came for?" His criticism was so valuable that my article was entirely rewritten and greatly improved.

During my life I have met with few men for whom I have had such respect as I have had for Dr. Prudden. No thought of personal ambition swayed him in his work. In later years I knew him as a consultant pathologist to the Health Department. Dr. Biggs consulted him constantly, and relied on his whole-hearted co-operation. His criticism and suggestions were of the utmost value. He gladly gave his thought and time to measures which were helpful to the health and welfare of the public.

There have been few men like Dr. Prudden, and his influence upon those who came in contact with him has been great and lasting. Dr. Prudden did not make friends very readily, but when he did accept you as one it was a lasting friendship and one that profited greatly.

In 1899, Dr. James Ewing, of the Department of Pathology of Cornell University, dedicated to Dr. Prudden his work on the *Clinical Pathology of the Blood* as follows:

To Professor T. Mitchell Prudden, M.D., LL.D., in appreciation of his constant aid freely rendered to the author during a term of service in the laboratory of the New York College of Physicians and Surgeons, this work is gratefully dedicated.

Dr. Ewing has considerately allowed the use of notes which he prepared for Dr. Hektoen in 1925.

Dr. Prudden was an aristocrat in personal habits, social relations, and intellectual pursuits. He was of tall, slim build and walked with a lively, rapid step. His apparel was plain and well-chosen. His tastes were aesthetic, and his appetites moderate and fully restrained. He used to say he would smoke a few good cigars rather than indulge an appetite for many poor ones.

He had comparatively few intimate friends, and he was not easy at first to approach. He had no vices and no distractions from his professional work. His conversation was always couched in refined, moderate language. He chose all his words very carefully, never exhibiting any undue emotion. He was an extremely careful student of language, making fine distinctions in judgment and actions. He formed rather caustic judgments of the shortcomings in the medical profession, discussed them quietly, with regret rather than asperity, and never expressed them in public. He spared himself over-exertion and over-indulgences of every type, but he seemed never to waste a moment.

He preferred always to be the silent force behind the scene, working through effective agents, whom he selected carefully. He never made himself particularly prominent to the eye or ear in any institution with which he was connected and over which he often ruled. A remarkable feature was his intense loyalty to his favorite students and his associates, and he was much inclined to overlook shortcomings that might be quite obvious to less kindly critics. Anyone who worked under him was thus assured of support and protection and whatever advancement was merited.

As a teacher he was an inspiration to the keen and serious student and a sarcastic enigma to the dullard. In his lectures, which were charmingly delivered, he probably at times addressed the upper half of the class. He was very clear in exposition of essentials. He took a keen delight in the finer points of demonstrations, and this attitude was communicated to the students.

To his laboratory associates he was remarkably faithful in rendering daily aid in their routine and research work. He suggested far more topics for research than anyone could possibly pursue, and he followed the progress of the researches in his laboratory with great detail, suggesting changes and giving irresistible encouragement. He was a fine technician. He encouraged originality and detected it with unerring skill. In this respect, he frequently had to over-rule the decisions of subordinates who were less interested in originality.

As a literary critic and as a writer, his ability was of a very high order. All his texts were reviewed again and again, and polished to the last degree. Hence his publications were not numerous. He would take text from one of his assistants, which had been prepared apparently with extreme care, and return it next day obscured with blue pencil marks. I have never known his criticisms in this line to be without sound reason.

His early medical education abroad, as outlined by Flexner, probably put him in possession of some new principles and facts, but could not alter his own force and tendencies.

He slowly gathered about him a group of enthusiastic laboratory workers. In this group, the spirit of effective teaching and research was strongly fostered. Yet in those days, while the relations between the workers were cordial, there was always a wholesome tendency to indulge in self-criticism rather than self-laudation. This group of workers steadily increased between 1880 and 1900.

From Rowland G. Freeman, M.D., comes the following tribute:

As one who was closely associated with Dr. Prudden from 1888 until his death, who for twenty years worked under him in his laboratories, and who feels indebted to him for innumerable acts of kindness as well as great assistance through his wise advice, it is a great privilege to record my affection for him and my indebtedness to him.

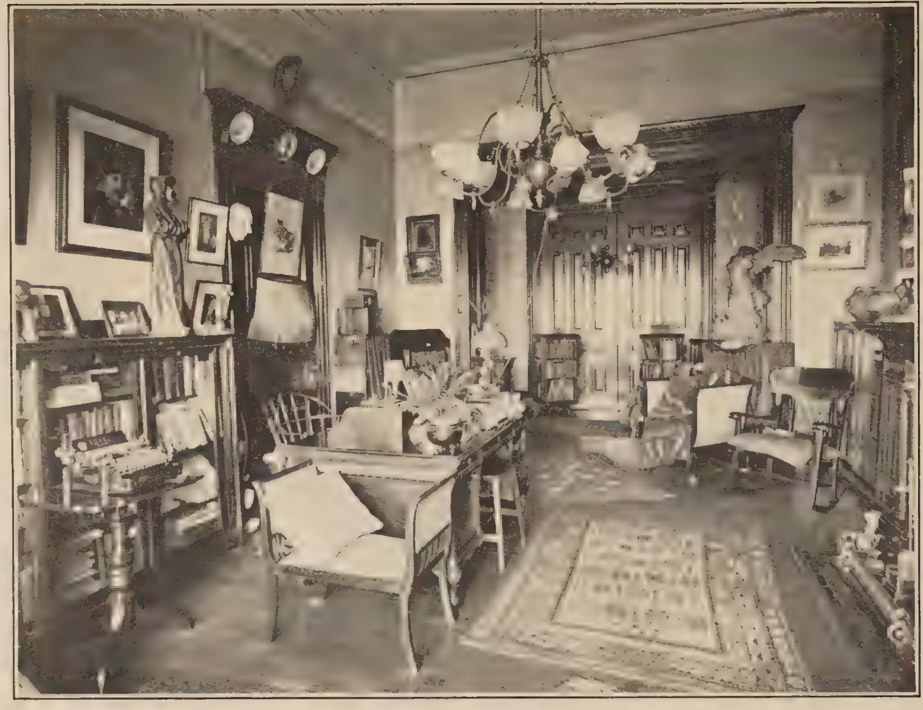
While a large circle of acquaintances of Dr. Prudden know of his ability and charm as a teacher, of his authority as a pathologist, of his predominating influence in municipal and state public health matters, of his valuable services to the Rockefeller Institute; far less is known of his influence and intimate association with his fellow-workers in his laboratories, and his devotion to his friends. Here he showed a kindly interest in all forms of investigation, was an active coöperator in all the research undertaken, and was most helpful in following carefully the scientific publications, and making references for the use of his laboratory men. He was a careful reviewer of all manuscripts, offering often most radical criticism and occasionally advising the entire destruction of a manuscript in order to obtain a rewriting of the whole.

The influence he thus had on the lives and development of the men working with him is one that affected not only these men, who themselves became teachers, but also the men who were later to be their students. Dr. Prudden's influence thus spread over a large circle, and will continue to be felt in scientific work.

As a friend and counsellor, he was a valuable aid to a considerable circle. He was always willing to devote time and serious thought to the affairs of his friends, even when he himself was discouraged and fatigued by illness. He was always a sound adviser and a valued guide.

His personal economic struggle ended in 1892 when he was appointed to the newly created chair of Pathology in Columbia University. He was still *ex-officio* Director of the Laboratories of Histology, Pathology, and Bacteriology, but as a member of the faculty received thereafter the usual salary of a professor.

After fourteen years of New York boarding-house life, which had run the gamut of varied conditions from a hall bedroom on the top floor to a study and connecting bedroom on the second floor, and had tested all manner of eating arrangements, it was no



Library at 160 W. 59th St., New York

small matter for him to be free for the first time to plan a comfortable menage for himself. The apartment in 59th Street, which was to remain his home for thirty-two years, was carefully chosen to give the space which he craved and the outlook over the two miles of park, which he loved and watched by day and by night through the changing seasons. He maintained an establishment that gave him the pleasure of such modest entertainment of his friends as he wished, restful surroundings for his infrequent hours of leisure, and quiet for work.

Very little change was ever made after the first furnishing, and it always remained an unconventional bachelor apartment with no pretensions to elegance. Decorations in his spacious library were assembled under no set rule. An heirloom from the Southbury farm jostled a Breton tile. The Lincoln life-mask and the statuette of St. Francis of Assisi bespoke his admiration for two characters whose rule of life was self-denial for the sake of others. The Winged Victory and choice Indian jars vied with Navajo and Indian rugs in giving life and color. A large photograph of the Matterhorn opposite a charcoal sketch of a "wily coyote" was suggestive of diverse summer experiences. A relief map of the United States and an unusually good attempt of the photographer's art to capture the mystery and beauty of the Grand Canyon filled one wall space. The mahogany writing-table and bookcases were bought with money received from early popular magazine articles. The decorations of the mantel were thoroughly individual. Most prominent were photographs of his immediate family. There was a humorous touch in placing a convivial monk and a devotional monk side by side, while Voltaire was turned so that he faced Saint Cosmo. A simple arrangement of lantern and curtain could instantly transform the room from a study into a comfortable studio for the exhibition of pictures where from his large collection of lantern slides, friends could enjoy his charming informal description of his beloved southwest country in either its past or present aspects.

His library showed a diversity that was one of the secrets of his literary ability, and his essentially orderly mind had become his willing servant through training. As early as 1870, he began keeping a record of books read, with a résumé of their contents, in a blank-book popular among students at that time, called an "Index Rerum." The entries were at first literary and historical, but came to be largely medical and scientific. He later adopted cards for memoranda of any subject he wished to consider, or for any desirable quotation, and had a large box of manilla envelopes for clippings on many subjects. His power to choose felicitous words and phrases was undoubtedly a gift, but that definition of genius as "an infinite capacity for taking pains" was exemplified in everything he did.

His innate desire for good workmanship in his primary occupations of teaching and writing made more noteworthy his success in steering between the constant temptation to concentrate upon science, on the one hand, and, on the other, the well-nigh endless opportunities that came his way to make his influence helpful to individuals and causes. At one time he prepared bacterial studies for high school teachers, and at another, questions for Civil Service examinations, and viséed the papers for the Civil Service Commission, impelled thereto solely by a sense of duty.

He was consulting pathologist of the Manhattan Eye and Ear and of St. Luke's and Roosevelt Hospitals, and in touch with pathological interests in other hospitals. As one of the consultants of the Board of Health, Dr. Wadsworth has mentioned the time-consuming nature of his activities. In the appendix will be found the letter he wrote to Mayor Low in 1901, urging the necessity of securing Dr. Biggs as Health Commissioner in order to continue the well-planned "lines of defense against infectious diseases," which Dr. Biggs had established. Under Dr. Biggs as health administrator, the dreams were realized that they had shared from the time when they both caught the vision of what bacteriological methods could accomplish in preventive medicine. The letter is a summary of what had been accomplished at that time, and forms an instance of the quiet way in which he stood by Dr. Biggs in all his work which, particularly between 1892 and 1896, Dr. C.-E. A. Winslow says, "not only gave to all subsequent public health practice in the United States its basic and fundamental quality, but exerted a profound influence in the same salutary direction upon the intellectual attitude of the entire medical profession."

But twenty-five articles in magazines and medical journals are listed in the years between forty and sixty. This takes no account of unsigned editorial contributions from his pen. One must read the list of the yearly publications of the Laboratory of the College of Physicians and Surgeons to see what he was accomplishing in inspiring others to enter doors closed to him by the limitations of time and strength.

Seven more editions of the textbook, which grew to a ponderous volume of more than a thousand pages, had taken their toll of laborious hours before Dr. Wood relieved him of the burden. He seldom closed his college duties before four P.M., and that was his hour for appointments with visitors. A walk, a bicycle ride, or an hour in the gymnasium were a part of his régime. For the evening, there was a little theater-going, some visits to clubs, a few calls, or dinners with friends, much reading and more writing. He had become a member of the Century Association in 1890, and found there as well as at the University and Athletic Clubs, diversion and pleasure. The Pathological Society was a major interest for some years.

The publication of popular articles like that upon the *Ice Supply of New York,* in 1888, and particularly the "Glimpses of the Bacteria," in *Harper's* in 1891, flooded his table with communications among which were requests from all manner of cranks who had ideas and cures to offer for consumption, grippe, or diphtheria. One would share the pecuniary advantages of the substance he would like to submit under the bonds of absolute secrecy, and another is indignant at his refusal to testify in regard to a "microbe killer." Some wish to purchase for advertising purposes the privilege of using extracts from his writings.

After 1896, he allowed himself the luxury of secretarial help, and the files kept for a few years give a picture of the diverse claims upon his time. A cross-section from the correspondence of any one year reveals widespread contacts.

Problems of administration were constantly arising. He was always ready to supplement from his own resources lacks in college appropriations if thereby his department could be improved. One year he advanced $1800 for microscopes, lest a delayed order should prevent adequate equipment for a large class. The inauguration of a departmental library, a new and much-valued feature, was due to his initiative; and the first printings of the research papers of his laboratory were at his expense. The following letter to Mr. Low, the president of Columbia at that time, illustrates a characteristic thoroughness in dealing with an administrative difficulty.

From Dr. Prudden to President Low.

June 16, 1897.

The request of the Faculty of Medicine that the College building be kept open and electric lights supplied on such holidays as may be designated by the Heads of Practical Departments, was based, so far as my Department is concerned, upon the following condition of affairs here.

In the first place, the Department of Pathology has ever since its organization endeavored to create here a centre of research, which should attract to it men engaged in higher studies, both such men as devote their entire time to this work and to such practitioners of medicine as are gathered in New York and are able to devote only part of their time to investigation.

This effort has been successful, and the Department of Pathology draws to itself from many sources enthusiastic and successful workers. Some of these men only get a full day for work on a holiday, and it has been a source of extreme annoyance and real hardship to men of limited time and with important engagements to find the College building closed, because certain other persons find it convenient to take a day off.

In the second place, it is necessary for a Department of Pathology, which aims to keep in touch with the active life of the medical profession, and this it must do if it is not to sink into a routine school teaching concern, to be accessible practically at all times to medical men and others, who, for the purpose of depositing specimens, for consultation on difficult points, or for receiving the reports of microscopical examinations are constantly coming and going.

It should not be forgotten that as the result of years of hard work, diplomacy and whatever other influences have been brought into play, this Department has secured for itself the position of a pathological centre for a large number of hospitals and dispensaries, not only in New York, but in the surrounding territory. We hold these Institutions and command the material important in teaching, which they furnish, simply because we are accessible to them, and keep the ways of communication freely open by messenger, by express, or by private carrier.

It is hardly more reasonable to close this Department, than it would be to close the hospitals and dispensaries associated with it on well folk's holidays, since the questions which are here decided, often mean life or death, and must frequently be decided without delay.

In so far as this is a Department to teach undergraduates, the holidays may be frequent and the College door barred without harm, not so with its wider field of work.

The same condition of affairs exists in the summer vacation. So much interest has been created in the work which is being done here, that a considerable number of valuable workers want to pursue their researches during the summer, and they should be permitted to do so.

In regard to the electric light, this has been made a necessary factor in the construction of the new buildings, and the Superintendent of Buildings has repeatedly assured me in the past, that with an electric plant running the additional expense required for such few lights and such little power as we need here, would be trifling indeed, scarcely noticeable.

I do not understand why these conditions should have changed so within the last few months.

Finally to specifically answer the question of your note, I think that the College building ought to be open on all holidays throughout the Session, except Sunday, and the electric light be available and furthermore, it should be either open, or at least such Departments as require it, should be made accessible throughout the summer vacation.

The Dingley tariff bill had aroused him to a campaign of unsigned editorials as to the seriousness of the tax on microscopes, believing it "unworthy of a great nation to thus oppress rather than help science." This gave occasion for another letter to Mr. Low.

From Dr. Prudden to President Low.

March 24, 1897.

I found it necessary to include in the Budget for the Department of Pathology in the College of Physicians and Surgeons for the year 1897-'98 the sum of $300 for apparatus. This sum was estimated on the assumption that the present existing exemption from the duty on apparatus imported for educational institutions would continue. If the proposition in the Dingley bill relating to scientific apparatus, which adds five per cent to the existing tariff and cancels the exemption clause, shall become law $135 more will be required for the purchase of this necessary apparatus for this department.

I feel it my duty to call your attention to this condition of affairs, because it involves, either an increase in the sum to be appropriated for this purpose, or a definite curtailment of the work of this department.

May I not further call your attention, anent this subject to the serious obstacle which the imposition of a tax on books places in the way of the research work of this department. Since, unaided as we are by the University in our endeavor to establish and maintain a small working departmental library, the scope of the private contributions by which we are endeavoring to continue the purchases and maintain our subscriptions will not suffice for the increased outlay thus wantonly imposed.

Memorandum of the Tariff on Microscopes.

The form of microscope made by Leitz, much like the later importations for our classes, can be furnished, with high and low lenses, Abbey iris and oculars, without duty for $47.50. The same microscope with the present duty costs about $66.60, that is, $19.10 more. With the proposed Dingley duty it would cost about $70,—that is $22.50 pilfered from the purchasers for the sake of manufacture.

If we graduate, say 150 students, and each buys one of these cheap microscopes, paying duty, the class as a whole is fleeced $3,375.

He never sought honors, but honors came. Often they were waived aside with a courteous note. Only in the case of the Yale Medical School Commencement address in 1897, do we recall his changing his custom of refusal to speak in public. His old friend, Dr. Lindsley of New Haven, had assured him in the invitation that he was the choice of the medical faculty "as the most eminent living graduate of the department." We have the drafts of two notes, one declining the honor since he is

> too entirely occupied with routine and promised scientific work to feel that, in justice to the occasion and myself, I can undertake to prepare an address. Furthermore, I do not find that I have anything within me urging to be said. Then, too, I do naturally so much prefer the rôle of a quiet worker in the vineyard to that of a personal public expositor that I should hardly feel impelled were other things favorable to the acceptance of so conspicuous an honor.

The note actually sent was as follows:

> Permit me to express to you my gratification in receiving the invitation to deliver the address in Medicine at the next Yale Commencement.
>
> I can think of no honor more genuinely satisfying, nor could one be more pleasantly and gracefully tendered. I accept the invitation and beg that you will express to the Medical Faculty my appreciation of the esteem and confidence which this summons implies.
>
> Will you not advise me if the Faculty has suggestions, either traditional or special, to make as to the nature of treatment of the theme to be selected for discourse.
>
> To yourself, my greeting and cordial thanks.

He did not know when he accepted, that the degree of LL.D. was to be conferred upon him at that Commencement. The closing words of Dr. Fisher in presenting him for the degree were, "After such substantial services to the cause of medical science Dr. Prudden returns today to the University where his studies and his labors as an instructor commenced, to receive at her hands the best acknowledgement of his merit she can offer, the highest degree in the Arts." Much as he valued this honor and strong as were his affections for his alma mater and for friends there, other New Haven invitations were invariably declined, although they were always gratifying, notably those to speak at the Semicentennial of the Sheffield Scientific School, and to join in the Yale 250th anniversary celebration.

In answer to a letter from Professor Lounsbury of Yale inviting him to lecture, in which he is reminded that he has not discoursed to an audience in New Haven "since you expounded years ago the manners and customs of the fiddler crab," he wrote the following note:

From Dr. Prudden to Professor Lounsbury.

160 West Fifty-Ninth Street,
February 2, 1895.

I very much wish that I could read my title clear to enough time in the just-in-front future to prepare a talk for the Mechanics Course at New Haven. But being a sort of educational Pooh Bah and having already assumed more unofficial tasks than can be respectably carried, I cannot consider the lecture as a possibility and am sorry.

The fiddler crab and I are pleased to be remembered so long and I aspire still to lecture to the Mechanics but bye and bye, who knows that the days in the twentieth century wont be longer.

I thank you for your kind letter of invitation and sincerely regret that I cannot conform to its suggestion.

The same general form of declination served for more distant invitations like one in 1896 to become a member of the "Victoria Institute, or Philosophical Society of Great Britain"; or one to attend the XII International Congress in Geneva in 1897 from the president of the section on hygiene. He was invited to deliver one of the public addresses before the British Medical Association at its meeting in Montreal in 1897. This invitation was conveyed by cable supplemented by a letter from Dr. J. G. Adami, then of McGill University, Montreal, who assured him that no American had been asked to speak before the British Association up to that time except Dr. John S. Billings, and that he, Dr. Prudden, was being asked to take the place of Lord Lister. The following is his reply:

From Dr. Prudden to Professor J. G. Adami.

April 5, 1897.

I can hardly express to you my surprise, nor do I need to assure you of my extreme gratification at receiving the invitation to deliver an address at the coming meeting of the British Medical Association, in Montreal.

I appreciate fully the great honor which is thus tendered and if I could bring the achievement within the seeming possibilities, I should gladly, though with quaking, commit myself to the attempt. But I have already in hand such routine tasks as require all my time until the close of the academic year. Then the pursuit of plans which cannot now well be altered will lead me at once into the far West and to fields as remote as possible from medicine.

Beyond these personal considerations, which no doubt seem more important to me than they can to another, may I confess to you that even could I command the time, my wraith does not encourage me with a suggestion of any theme adequate to the occasion upon which I must say something. Nor does the habit of a recluse now grown strong tempt me to so strenuous a public undertaking.

I am really very sorry that I cannot see my way clear to the acceptance of the flattering invitation, but my conviction is strong that I must not assume the task.

Let me at last thank you most sincerely for the honor so gracefully tendered, and which I am sure I owe most of all to your kindly and too partial estimate of my capacity.

Doctor Carmalt of New Haven, as Secretary of the Congress of American Physicians and Surgeons, wrote inviting him to speak on the relations of bacteriology in health and disease at the meeting held in Washington in 1900. He replied with the following letter.

From Dr. Prudden to Dr. Carmalt.

I need not tell you that I am pleased and flattered and even puffed up by your invitation to address the Congress in Washington next year. I suppose it to be your good nature and partiality, if not discrimination, to which, under the disguise of "Committee," I am indebted for this honor. I am mighty sorry that I cannot see my way clear to undertaking the address. I so much dislike such public functions and am so little skilled in executing them, and withal so little desirous to be skilled therein, and am possessed of so stern a resolution to secure more time from distracting things for old-fashioned scientific work, that altogether, I cannot bring myself to an acceptance of your kindly suggestion. I can not, I thank you, and may your shadow never grow less.

From Dr. Prudden to Dr. St. Epstein, of the Hygiene Institute at Prague.

December 1, 1900.

I appreciate your courteous invitation to me to contribute a scientific paper for the Festschrift which is to be prepared in honor of Professor Hueppe.

Professor Hueppe's service to science along many lines has been so great, and his teaching, which I was so fortunate as to receive in Wiesbaden many years ago, was so stimulating, that I should be very glad, were it practicable, to be numbered among the contributors to this testimonial. But my time is at present so fully occupied with urgent routine duties that it will be quite impossible for me to prepare a paper for this volume. Be assured that it is with much regret that I find myself unable to share in this admirable undertaking.

Thank you for the privilege which you have so kindly extended to me.

In 1901, his election to the National Academy of Science, the highest scientific body in the country, is prefaced by the following correspondence:

From Dr. William H. Welch to Dr. Prudden.

Baltimore, December 19, 1900.

Will you not do me the favor of sending me a complete list of your published papers and books, giving titles and places and dates of publication?

I am not going to put it to any bad use, and shall be very much obliged if you would comply.

From Dr. Prudden to Dr. William H. Welch.

December 22, 1900.

I am willing to trust you with my purse, my honor, and even with my conceit, for of that the deliberate preparation of such a list as this seems to savor. Poor stuff much of it, in perspective, though it cost good hours. I wish I had some of them back again. I cannot imagine what purpose you have in view but some good and disinterested one, I dare swear.

I wish that I could join the people at the Association meeting next week, but my journeying leads elsewhere.

From Dr. William H. Welch to Dr. Prudden.

December 24, 1900.

Thank you very much for the list. I appreciate your confidence. The papers and books tell a story of good, scientific work, but they do not begin to tell all you have done for the advancement of pathology and sound teaching and research in this country.

I am particularly sorry that you cannot be here this week, but when the societies meet elsewhere I too do not like to give up my Christmas holidays to mere meetings.

From Dr. William H. Welch to Dr. Prudden.

My best congratulations upon your election to the National Academy of Sciences, which should have come before this.

With the election of Agassiz as president I think the influence of the Academy will be increased, especially on the side of its relations to the national government, of which it is in fact a part. You will, I hope, come to the meetings.

You will understand now that mystifying request for the list of your publications, which the nominator of a candidate is expected to supply for distribution to the members. As these lists have served their good purpose, and I have no further use for the remainder, I forward them to you, although I do not know that you will have any particular use for them. Still I think they make so handsome an appearance that you may at least like to see them.

From Dr. Prudden to Dr. William H. Welch.

May, 1901.

I could not have dreamed that the mystery of the list of publications would be solved in so—to me—delightful and satisfying a fashion. It seemed so obituary like—you know how they look—the man's work crowded in small type under the announcement the next morning in the papers—fads gone to seed, if they had the vitality to make seed, things of the hour mostly. Did it ever seem worth spending a winter to see if there were tubercles without tubercle bacilli; and did you and I live at a time when it was worthy endeavor to stop suppuration by carbolic or salicylic acids?

It was mighty good of you to help me into the National Academy and I thank you heartily.

I want to talk with you in Washington about the Rockefeller project, which seems to me a prodigious undertaking apart from a university association.

It is difficult to choose and would be impossible to give space to letters written to him expressing appreciation of his various books and papers as they were published. Dr. Welch, in particular, had a gracious and genial habit of writing him when each new edition of the *Handbook* appeared, and these were in a small package in his desk, a fact which carries a hint of his special satisfaction in them. In the same package we find a letter from Mr. George H. Warner, into whose hands a copy of *The Element of Contagion in Tuberculosis* had come by chance, which says:

> I have been trying to formulate the reasons I have for liking your writings, and this is it. It is as when one goes into the mountains and comes across a clear spring of water, limpid, pure, one recovers his sanity. Amid all the jargon of the sanitary and medical papers, your work is unique, simple, direct, clear, *literary.* You are a clear day after clouds, and besides that I like you.

We limit our further selection from this class of letters to the following:

From Dr. Trudeau to Dr. Prudden.

March 27, 1894.

I must tell you how I enjoyed your article in Harpers. It seemed to me a most interesting bird's eye view of the whole subject and your avoidance of long words and technical phrases is wonderful. I also greatly admired your hint to the millionaires! What a diplomat you would have made! However it makes me feel very glad that I didn't attempt a paper on tuberculosis last fall when I was offered the opportunity for you know "comparisons are odious" sometimes.

From W. T. Councilman, of Department of Pathology, Harvard Medical School, to Dr. Prudden.

January 11, 1912.

I do not know whether you are entirely averse to an expression of appreciation, but I do wish to express to you my very great appreciation of the last edition of your pathology. It seems to me that you have kept away from many of the faults which I have come to regard as almost inherent in the textbooks on pathology.

The book is delightfully written, the relative importance of things has been admirably preserved, the illustrations are admirable, and I shall recommend your book alone as a textbook for my students. It bears the evidence of a great deal of very careful work. I have been particularly interested in that I am now preparing a short syllabus for the class, and in connection with this I have looked over a great many textbooks. My one fear is that my syllabus may prove but little more than an abstract of your book in which case I shall expect that you will very greatly enrich yourself by the institution of a suit for damages.

From Professor J. G. Adami, of McGill University, to Dr. Prudden.

October 24, 1901.

There is an old Oxford verse about Freeman the historian and Stubbs, likewise a historian, who afterwards became Bishop of Oxford and is lately deceased, which ends, if I remember it aright—

"And ladling butter from respective tubs,
Stubbs butters Freeman, Freeman butters Stubbs."

I feel that in the present instance we two must come under the same category. You wrote to me the other day so appreciative a letter and now I cannot acknowledge it and thank you without at the same time heaping praise upon you for the new edition[1] which, the more I look into it, strikes me as a splendid work, so clear, so comprehensive and so well balanced, selecting just those things in more recent researches which to me seem to be of peculiar value.

You seem to have broadened out the work greatly and to have made it more than pure morbid anatomy and histology while keeping that preciseness which was so marked a feature of the old work.

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[1] The *Handbook.*

I am grinding out the present time very slowly a work which shall be more upon general pathology, but it is hard work. Your virtues appal me!

There are many letters of introduction, among them a series for one of his students to noted instructors abroad, and many letters of recommendation. It became one of the great satisfactions of life to recommend men to important positions all over the country. As the conceptions of public health widened, he was increasingly asked to suggest pathologists to municipalities and institutions. From Maine to Oregon the requests came. His discriminating judgment of men made his recommendations valuable, and they were widely sought.

Sometimes there is no one on his horizon to select for a required position, but he promises to "hold the matter in front"; or, he says, "The trouble is, there seem to be openings enough, and promising ones for the brighter men, and the others, whose name is legion, Heaven help them, you do not want." Or, more frequently, "I think that the best way of filling such a position as yours is to select a promising graduate in medicine, and give him a year of special training in the technique in bacteriology and pathology."

He answered genuine inquiries courteously, sometimes at length: what filters he would recommend for certain conditions, what amount of air is desirable for sleeping rooms, what is the best method of disinfection, what kind of microscope a young doctor should purchase, what the officials of a certain railroad should do about water examinations for typhoid germs, how a lady whose husband is a doctor who has recently become insane should deal with his professional obligations! For instance, asked for good subjects for Commencement themes by a correspondent, he answered:

> I think that the importance of Hygiene among the themes embraced in a college education is a subject which could be appropriately enlarged upon and with telling illustrations.
>
> If one sought for a practical theme, and such are almost always useful, and may be made interesting, one could take up the contamination of public water supplies, so clearly universal in this State, or other problems and themes akin to this. So much depends upon the treatment, however, and so much upon the actual interests of the writer of the discourses of the theme, that I do not think one gets so much from outside suggestions as from the personal interest which he may have gathered for himself about some particular thing.
>
> In regard to your question, what I consider the three best papers upon Medical subjects written during the last twelve months, so much depends upon the point of view, so much upon the individual interest at the moment, and so much upon perspective, which the lapse of time has not yet furnished, that I do not find myself willing to answer.

After 1892, archæology became more and more a winter as well as a summer pastime and furnished the subject for a large part of his correspondence. He had gradually acquired by exploration and purchase a collection of about nine hundred articles illustrative of the life of the cliff dwellers, the careful labelling and arranging of which for exhibition to his friends occupied many rest hours. They were largely potteries and textiles, and in 1904 he set about finding a more permanent and suitable place for them. He knew that the Archæological Department at Yale had little material for the study of the past life of the Southwest, and he therefore took pleasure in presenting them to the Peabody Museum of Yale University with suitable cases for their installment. Twenty years later Yale received a small legacy by his will to promote further study in this branch of American archæology. In writing of the gift in 1904, Dr. George Grant McCurdy, of the Archæological Department, said, "It is a rare combination of gifts that enables a son of Yale to finance his own expedition, publish his own reports, and finally give his collection to strengthen a weak department in the Museum." This collection now occupies a prominent position among the relics of the Age of Man in the newly opened Peabody Museum.

Through the last five years of this period the Rockefeller Institute was another important element in his thought. Much time was given to architectural specifications for the buildings, and many conferences were held over the details of plans that were to realize for science opportunities which would have been priceless for him at the beginning of his career.

A vision of the diversity of the claims upon the time of the busy professor came to a frequent visitor when occasionally she was permitted to share the morning's mail. There might be a communication from a German pathological society or a Copenhagen institute, from the Uruguay government or from a seeker for

Dr. Prudden at Forty-five Years of Age

medical knowledge for Manila. There might be a letter of appreciation from a friend, or a screed from some enemy in the anti-vivisection ranks. The mail was sure to be varied and often spicy, but he was invaribly asked to do something and often many things. An old list of such requests and the probable answers that were to be made to them remains from such a visit.

Write article on A Great Hospital for *Outlook*. No.

Discuss paper on Condensed Milk. No.

Give views on National Health Board for Sunday Press. No.

Paper for *North American Review* on National Health Bureau. No.

Discussion before Library Club—Disinfection of books. No.

Editorial on National Quarantine, for Doty. No.

Write book for Progressive Science Series. No.

Appeal to Postmaster General. No.

Nominate professor in Medicine, Woman's Medical College. Yes.

Suggest professor of Pathology and Bacteriology, Atlanta, Ga. Shunted off.

Write book on Bacteriology. No.

Be expert for District Attorney in the Varoli poison case. No.

Consider salaried position as Pathologist, St. Luke's Hospital. No.

Write section on Bacteria for a Western book of household medicine. No.

Write series of questions for Chautauqua reading circle. Yes.

Prepare civil service paper and conduct examination in Brooklyn. No.

The following memorandum bears the date of a day in 1895:

Pay legacies for care of cemetery lots
Reproach architects for blunders at R. I.
Triplicate 5 bills for legislature
Read and advise on two manuscripts
Sign 48 nurses diplomas
Pay four college bills
Interview a protozoölogist for R. I.
Decide where to set a new cutter
Interview architects about heaters at Sloane

An excerpt from a letter written in 1905 to his friend, Mr. J. M. Goulding, then at the Grand Canyon, is in the same line:

> I am wading through the fag end of the season, each day being filled with a mongrel mass of details, which one is liable to encounter who has been foolish enough to dabble in several fields. I had the curiosity to jot down yesterday the themes which were upon my table for action or decision. The inventory may interest you.
>
> Decide whether to join in the following enterprises
> American Academy of Political and Social Science
> A crusade against child labor
> A School of Philanthropy
> Membership in a public Botanical Institute
> Scheme for the maintenance of a cancer hospital
> An association for the reform of criminals
> A visit to a seaside cottage for tuberculous children
> A private view of a mural painting, not completed, for St. Paul
> Recommendation of a professor of pathology in Milwaukee

Opinion as to the meaning of a figure on a Navajo rug
Opinion on cess-pools in Elmira, New York
Provide for the administration of the lying-in-hospital during the summer
Set the price on a piece of real estate in New Haven
Attend a conference on cerebrospinal meningitis
Write a flattering note to the author of a novel who sent his book
Devise a form of bequest for a hospital
Select a set of books for a medical library.

This is one morning's list of things which do not at all directly concern one's duties as a pedagogue. However, I am rejoiced to think that probably within a month I shall be turning my steps westward and, I hope, Canyon-ward.

WESTERN VACATIONS

Cliff Dwellings—The Prehistoric Dust Heap—Dr. Northrup's Reminiscences—The Grand Canyon—Indians—Friends of the Open Life—Letters to Clayton Wetherill and others—Letter from J. M. Goulding.

FOR many years his vacations were varied. The Maine woods with their vast solitudes were sufficiently alluring for him to hold a membership in a club there, but neither fishing nor hunting ever attracted him in itself. He became familiar with the high trails of the White Mountains through successive summers. He had one season in the Canadian Rockies, and occasional trips abroad. But after 1892 no other vacation compared with those spent in that land of wide horizons in the section of country embracing the corners of Colorado, Utah, Arizona and New Mexico. It is a land of "forests and deserts and canyons and gorges and buttes." Here, with days in the saddle and nights under the wonderful skies, he found, in spite of thirst and heat, summer outings that suited him, "out of sight of settlements and out of hearing of locomotives, and you are face to face with the naked earth, as the great sculptors—flood, wind, and sand—have left it."[1]

The lure was not alone in the air, the scenery or the free life, the geologic formations or the geographic situation, although each contributed, but in the relics of quaint houses on the cliffs, the remains of a prehistoric race which had lived its life and disappeared before the Spaniards came peering out of Mexico in search of gold. It was fundamentally a human interest that made the doctor of medicine an archæologist. It was a human interest that made him study the ways of the modern remnants of the people who once owned the whole region, and there was a human interest in his relations with those who, as valued guides and companions, helped him for many successive summers explore the watershed of the San Juan River, locate and describe the ruins, indicate the trails by which they could best be approached, and the promise each held for more detailed research by experts. The area covered proved to contain 30,000 square miles; the trails were few and water was scarce, and it was good sense as well as pleasure that made him take a few weeks each year resting on the brink of the Grand Canyon after strenuous weeks afield.

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[1] Prudden, *Great American Plateau.*

He came to know this wonderful gorge of the Colorado River as travellers seldom do. Just because he was so much "under the spell" of it, he hesitated to write of it, but his efforts to describe the indescribable were wonderfully vivid. The popular articles, "The Summer among the Cliff Dwellings," "An Elder Brother of the Cliff-Dwellers," and "Under the Spell of the Grand Canyon," appearing in the *Harper's Monthly* in the successive years of 1896-1898, were so much appreciated that he ventured outside the realm of either medicine or public health to publish an amplification of these articles in the book, *On the Great American Plateau,* with illustrations by Edward Leaming, in 1904. It is a book that revels in the bracing air and genial sunshine of the plains, and is a real contribution to the literature of travel, since it pictures vividly what impressed a keen-eyed observer whose power to paint with words adds a charm to every page. The book won favorable recognition, and was enjoyed by those who, like himself, knew the grandeur of the Southwest country, but it came out too late to meet the Christmas trade of that year, and fell far short of ever being a "best seller." His satisfaction lay in the pleasure of writing it and in the opportunity to make a plea for what remains of the homes and relics of an ancient race.

It was not until he had been for many years what he called "a poacher on archæological preserves" that the first contribution of his pen appeared in the *American Anthropologist.* It was the article on the "Prehistoric Ruins of the San Juan Watershed." The magazine could not afford to print and illustrate it as he wished, although its value was immediately recognized. He therefore assumed the entire expense himself, and it became an introduction to new friends in a new realm of science. From parts of an unpublished article called "A Prehistoric Dust Heap," we get an idea of the zest with which he made research enrich his weeks of freedom from routine duties. Estimates of the value of his archæological work are reserved for a chapter on later life.

One summer I sought by dim trails a famous canyon in the great desert upland of Arizona. In its lofty walls great ruins of the old prehistoric Cliff Dwellers still linger on the face of the ledges, saved from the wear and tear of centuries by the overhanging walls of natural caverns.

The ruin which I went to see hangs some fifty feet above the canyon bottom. This ruin has been explored by Government experts and many times visited by the frontiersmen, some of whom have carried away pottery and other relics.

Whatever household wreckage of the ancient life was left in these houses when the old fellows passed away has been buried deep in drifting silt. So in the protected nooks and dry air time has dealt gently with the mementoes of an earlier age.

There is a fascination about these deserted homes and the desolation which broods upon them. And it must be confessed that the temptation to poke and delve is very great—to those whose interest is keen in these forgotten people. The writer is gratified even to boasting that he has been able under most trying conditions to refrain from meddling with any of the ruins of the Southwest which he had wandered far to see, whose integrity had not already been destroyed by legitimate explorers or unauthorized plunderers.

But here duty and inclination seemed to join in bidding me to clear out the half of the room which still clung to the cliff edge, ready to fall and scatter whatever of interest it might contain upon the canyon bottom, to be swept away by the next flood.

Our room was scarcely more than four feet across and rather more than half of it still remained. The adobe floor and the broken side walls were so loosely balanced upon the edge of the cliff that it was but a meager and shifty foothold which could be secured for working. The floor was covered about a foot deep with household rubbish upon which lay stones from the tottering walls.

Throwing off the stones which had fallen into the little square room, the surface above the floor was found covered level with fine sand and an impalpable powder which at the least touch rose in clouds of blinding dust. Scattered through this sand and dust-mass, sometimes apart, sometimes in heaps, lay most of the various articles which we found as inch by inch we dug and sifted them out with our fingers. It requires some resolution, after all, to be a voluntary scavenger in a prehistoric rubbish heap. The air is hot, the dust stifling, and you may be forced to ride for many miles before you find water enough to wash from your person these pulverized relics of humanity.

At last the room was cleared and all of the adobe floor which had not already fallen from the cliff was bare. Our task seemed ended. But as we sat resting we recalled how some years before at the Hopi villages we had watched a weazen old naked snake priest come stealing in to the pueblo at dusk and pecking away at the adobe floor in one corner, at last pull out beads and rattles and turtle shells and other uncouth equipment for the coming snake dance, which he had cached there two years before. Perhaps, we said, in the early days some old fellow had concealed his treasure in similar fashion beneath this well worn grimy floor. We found no sign of patching, all was smooth and even. But the memory of the old Hopi priest at Tusayan would not down. So we did what the doctor does when he wishes to mark out the hollow and the solid regions of our mysterious interiors; what the artisan does when he seeks a hidden flue in the wall; we percussed the adobe floor with the knuckles, inch by inch, thump, thump, thump. There was no doubt about it—there were two small places in this little area, far apart, which gave a hollow sound.

Our knives soon picked away the adobe plaster, exposing in both places flat stones about six inches across. Prying these up we came upon a level bed of sand from which a single loop of stout yucca cord projected. A light pull brought up out of the sand bed from each hole a neat bundle a hand breadth across tied with cord, an extra loop of which had been left exposed under the stone. There was nothing else in either hole, the bundles resting on the rock bed of the ledge. Then, with just a suspicion of breathlessness which, I suppose, was not at all scientific, they were carefully unwrapped.

Well, what would you expect in a cache so carefully made as this? Buried in the sand under the stone, the smooth plastered floor over all, in a room which must for years have been a rubbish chamber, and for years before a dwelling, and the whole place probably deserted and a ruin long before America was discovered. Treasure? That is after all a matter of age and environment. We should expect gold and jewels, I suppose, in the treasure house of our fancy today. But these old barbarians knew naught of metals and of precious stones, the turquoise seemed to be most highly prized. I confess we thought of turquoise first.

The wrapping of one parcel was a gray heavy cloth woven with a curious stitch like a fine meshed net and had been carefully patched on one side with buckskin. The other parcel was made of a reddish brown close textured fabric with an excellent inwoven figure in black, and was a little ragged. Some hard substance within was wrapped carefully in tow-like masses of yucca fibres.

One bundle contained a large mass of rock salt. The other was filled with lumps of red ochre—a store of face paint so excellent and so abundant that the keenest avarice could ask no more. Treasure indeed! Kingdoms have been bartered for things less precious. Gold and jewels, forsooth! Mere dross! No wonder the treasures were so carefully hidden. They must have been among the most precious things these brown barbarians knew.

And did the thrifty old fellow who stored it all away die, do you suppose, his secret inviolate? Did the clan or the household let the heap of rubbish deepen over this pathetic hoard unconscious of the added security thus lent? Or were they all driven out by some predatory band of the early nomads to make new homes elsewhere? Well, that is part of the story which was in the rubbish heap, and he who could read it wisely and in detail out of the dusty wreckage which we saved that day upon the crumbling edge of the cliff ruin, would have something new to tell.

. . . .

If you be one of those unquiet folks to whom for some weeks in the year a taste of the untamed earth and its native children seems imperative, you may find in the heart of the Great Plateau some 130,000 square miles of freedom. A strenuous freedom, truly, for you must win your way over its deserts, across its wind-swept uplands, and through its imposing forests, with something of the keenness of the old barbarian who still lingers here and there. You must command a certain hardiness to face the long miles of arid trails, the fierce sudden storms, and the relentless sun. You must know how to make a little food go a long way in an emergency and be satisfied always with food which is the simplest. You must sleep upon the ground with only a blanket and the stars over you. You must be able to find the meager springs and waterpockets in the land where water is the chiefest treasure. You cannot go on foot, and so must know how to manage recalcitrant horses or woo to service the whimsical but resourceful mule. You had better know the point of view of the owner of large tracts in this vast waste, the Indian, who is prone to make merry in no pleasing fashion with the obvious tenderfoot. If you can make it plain to the brown brother that you are not less at home in the open country than he is, and still possess the somewhat mysterious capacities of the white man, you may find in him a helpful and interesting companion in your untrammeled holiday.

Well, yes, if you press the matter, there are rattlesnakes and centipedes and strange black bugs which roam about. And the rattlers do have a fancy for the warm cozy folds of a blanket. But you can't blame them, for you like the same thing yourself when the cool nights fall. Still, accidents are quite infrequent, and you must curb your apprehensions. Every rustle of dried grass does not mean a crawling thing and you soon come to trust in the good rather than in the ill fortunes of the way and serenely mind your own business and let the varmints which call this country home, attend to theirs.

In fact, your risks of being sandbagged on the streets some night in New York, or of contracting typhoid fever through the criminal carelessness of a New England dairyman, or of acquiring tuberculosis in a Pullman sleeper, or in the average hotel, are far greater than the hazards of reptiles in the Southwest. If you offer me the alternative of an encounter with a rattlesnake or a transcontinental trip in a crowded Pullman, with its meretricious surface elegance and its deepening and steadily threatening filth, with a sense of great relief I should elect the lesser menace of the reptilian brother every time.

Three eastern friends had the privilege of companionship with him in his western trips. They were young Philip Bissell, a son of his friend Dr. Henry Hun, of Albany, and Dr. W. P. Northrup, whose reminiscences will here furnish a companion's point of view.

Prudden was by turns a botanist, mineralogist, geologist (also very much the latter), contour line map maker, expert student of cliff-dwellings, a human being among the guides, consorting with the stray wanderers of Indian tribes, old Indian basket makers, medicine men, etc. It is in such relations and in such circumstances that one comes to know something of the real man. His map making was so perfect that surveyors for railroads took his measurements with confidence, to the neglect of government surveys—notably the watershed of the San Juan. His guides were his constant friends.

I have seen him leave the drawing-room car at a way station, seek out a ragged Indian standing behind the front rows of station idlers, and engage in a short conversation. No doubt his list of Indian words was limited, but in some way he held communication. He began with "how" followed by much gesticulation and grunting. Old Nampao, the basket maker, was his special interest, and she always expected him to call. She was nearly blind, but her face showed at once that she knew him. The engineer of the Canyon railroad always expected him to ride in his cab, likewise anyone recommended by him. The oldest guides in the Canyon knew that he was nearly their equal in the knowledge of the best trails. The "diamond hitch" was his pride; his pack withstood the best efforts of the crafty mule to turn or dislodge it. He could cross-cut from the head of one canyon to another, steering by the sun and shadows, and arrive safely, having been all the time in the untracked forest on the rim. To me, as a tenderfoot, this seemed difficult. I have often wondered what some of Prudden's pupils who had known the sarcasm of his remarks on their microscope-drawings would have said if they could have seen him making coffee in a tomato can, squatting by a scanty fire in the desert, or trying to mount a restless mule. After all, he was ever himself, even preserving most of his dignity. Without seeking it, he became known as a "medicine man." A severe case of malaria with typical chills, even convulsions, came to a prompt recovery under his heroic use of quinine. A young Indian girl while gathering corn stepped on a surprised rattler, and was bitten. Under stupefying doses of whiskey and strychnine she, in some way, recovered. Prudden's fame as a medicine man spread. This was all very well, but the Indian medicine man was no longer friendly. One day this medicine man was sitting in one of those reflective moods during which he was supposed to be listening to inspiration from the spirits, when Prudden thought best to join him in his reveries. He sat on the mound near the Indian and proceeded to smoke with him in silence. They smoked on and on, still in silent revery. One, two, three hours they sat and smoked. At the end of the fourth hour Prudden drew from an inner pocket a mysterious biconvex reading lens. With due deliberation he proceeded to interpose it between his freshly filled pipe and the sun. Something about this proceeding attracted the attention of the Indian and inspired him with curiosity. Slowly the tobacco began to smoulder and then to smoke. This was too much for the Indian medicine man; his mysteries were outclassed!

Every year—and he visited the desert country of Arizona eight, nine, or ten times—his trunk carried interesting trinkets for the Indians and frontiersmen. Nothing so harmonizes with the hot sands and the sagebrush as do red neckties and red handkerchiefs. Dollar watches, jack-knives, strings of beads, ribbons, these things judiciously distributed were the best of introductions. After years of summering in and on the rim of the Grand Canyon, Prudden knew all the trails and most of the wandering bands of Indians, some of them friendly, some ugly. On one trip his party stopped long enough to haul a mule of some Navajos out of the quicksands. This made many and lasting friends.

For these summer outings Prudden heaped up anticipations until on the day of setting out he was radiant. All the toils and trials of laboratory life evaporated from his memory, and only the glorious prospect of meeting his guide and troop of horses and mules lingered. The first day out of the parlor car at Gallup or Albuquerque his troop rode into the desert twenty-five miles—seemingly a rather large contract for a house-bound professor. His love for the desert country stimulated him. "No more of these cottony clouds; real sky and worthwhile clouds."

That Dr. Prudden early became known as holding a brief for his friends, the Indians, against the evils that have so often crept in through maladministration of government agents is evidenced by the following reply to a request to lend his name to a league of national scope for the betterment of Indians and Indian policies, working through established agencies but with the advice of those whose definite knowledge would prevent the movement from getting into either impractical or selfish hands.

From Dr. Prudden to Charles F. Lummis

January 22, 1901.

I have been much gratified to learn of the new undertaking in the interest of the Indians; and the outline of the plan and outlook which you give me in your letter of the 8th inst. is the most encouraging thing which I have heard for many a day about this much misunderstood and misused folk. I should be very glad to be helpful in the matter if only in such simple fashion as you indicate, and so should be pleased to be numbered in the Advisory Board of the League for the first year.

Let me hold you for a moment longer—you must be a mighty busy man though you do live in the land of *poco tempo*—to congratulate you on the second birthday of the "Land of Sunshine." I have grown so fond of the old name and its stimulating associations that I cannot yet feel quite at home with the new. But, under whatever name, it is a delight now and then to get such glimpses of real things without the traditional obscurations. To say the truth, what I am particularly joyous over are the good old whacks which come down on sundry addled pates.

In the address on "New Outlooks in the Science and Art of Medicine," which he give at the Yale Medical School in 1897, he used an incident to which Dr. Northrup has alluded to illustrate primitive ideas of bodily healing. For further insight into his experience with Indian life and also to show his use of the experience to "point a moral," we quote the opening pages of that address.

I wandered last summer over that marvelous land of sunshine in our great Southwest where still fast dwindling groups of the real Americans cherish quaint customs, and linger among the superstitions of vanished centuries. And Fortune made me for a time a guest in a small tribe of these Indians, as yet almost untouched by the blighting finger of what to us is civilization.

I was drawn to them in this way: There came to our camp upon the plains, one evening, a woebegone dark fellow of this tribe, who with his squaw had wandered away from his comrades seeking a quiet place to die. He was wan and feeble. A demon, he told us, had long since gained entrance to his body and had tortured him with pain and cold and fire. All the art of his tribal medicine men had failed to free him from the intruder, and a little while before, some spirit had begun to whisper to him in his sleep, he said, that he must go into the dark. All this was gathered from lip and gesture and pantomime as he lingered with us, loath to relinquish at the last the scant comfort of human companionship.

In the light of the lore which had been imparted to me many years ago by my medical teachers here at Yale, I reckoned him the victim of malaria; and shortly, in fact, quinine had cured him. The demon was exorcised, the spirit ceased to whisper, the sun was again his friend, and the winds began anew to breathe to him their wonted biddings to the chase. The grateful soul, now eager to be away, was urgent that I should visit his people for he was fain to celebrate the facility of the white medicine man who could banish evil spirits without rattle, dance, or chant. And so I went. Eighty miles across the desert from any settlement, down at the bottom of a rock-walled chasm which leads into the Grand Canyon of the Colorado, and whose sides tower sheer half a mile, these brown-painted folks have lived alone and almost forgotten since long before the Spanish pioneers came hither for God and gold some centuries ago.

At the time of my visit several persons in the tribe were ill, and a celebrated medicine man had been summoned from afar in council over the stricken ones. After long and repeated conferences, my dark medical brothers consented to lay aside cherished forms of professional etiquette, and permitted me to take a place in the grave circle which at midnight crouched about a small fire built in the open, near which lay, half naked, the group of patients. One of these was clearly the prey of consumption; one was shivering with malarial poisoning; one was a croupy child; one I judged to have partaken unwisely and too much of spoiled jerked meat; and one was the victim of old age. I have not time to picture for you, as I should like to do, the weird scene which was enacted there from midnight until dawn, night after night. A low rhythmic chant rising and falling to the time of a rattled gourd; slow passes of the hands over the prostrate bodies, which now and again were blown upon from the pursed lips of the painted

Æsculapius, who now crouched crooning beside his charges, now danced furiously about them, while at frequent intervals wild yells from the attending circle woke hideous echoes from the cliffs.

I have lingered in story on the threshold of this address because I wish to emphasize the fact that in this country and today—in all countries of the world, for that matter—a large proportion of mankind, consciously or unconsciously, personify disease or think of it as something foreign to the body, some definite or mysterious thing intrusive. From the painted red man of the plains, who associates his bodily ailments with demons, spirits of the dead, witchcraft, magic, evil possession, and angry gods, and hopes to banish these with shrieks and songs, it is indeed a far cry to the clean-clad business or professional white man of the town, who more or less sheepishly confesses that he carries a horse-chestnut or a potato in his pocket to ward off rheumatism. But between the charm of the horse-chestnut and the chant of the savage lies a great body of ignorance and superstition, upon which quacks flourish mightily, and which cannot be altogether ignored in any wide outlook today over the field of medical science and medical art.

In fact, the superstitious red man is much more reasonable and logical in his procedures for the cure of disease, considering the scope and character of his conceptions of its nature and the phase of civilization which he represents, than are large numbers of considerably evolved white folks who, in the midst of highly civilized and cultured communities, bow still at the altars of sanitary savagery, cherish a devotion to drugs almost pathetic, and utterly fail to grasp the significance of the new conceptions of disease which at last have made of medicine an exact science.

Dr. Prudden ascribed much of the pleasure and success of these summer excursions to his good fortune in the beginning in enlisting the services of "a sterling young frontiersman, Clayton Wetherill," at whose ranch he outfitted year after year. His account of the Wetherill brothers will serve as an introduction to these western friends whose companionship was much valued each summer. They were

> a group of hardy young fellows, Richard, Alfred, John, Clayton, and Win, of uncommon versatility and energy, who in the early eighties all became identified with the investigation of the ruins of the old cliff-dwellers.
>
> Richard and his associate, Mason, were the discoverers of the great cave ruins of the Mesa Verde near Mancos in Colorado, which have recently been included in a National Reservation.
>
> For several years the Wetherills made long and arduous journeys into the far and lonesome canyons of the ruin country, and in some of the recently widely exploited "discoveries" of the so-called ruined cities near Navajo Mountain in Utah, the new "discoverers" might have discovered the modest initials of Richard or John Wetherill, if they had been venturesome enough to climb so high among the cliffs or honest enough to assume the more modest rôle of re-discoverers.
>
> Quite contrary to the practice of most of the "pot hunters," as they have been recently called, the excavations controlled by them were conducted with the utmost care and conservatism, careful records and descriptions being made.
>
> The learned men of the day seemed to care nothing for the pots or the ruins, and no funds were forthcoming then from the Government or from other sources to make investigations.

The Wetherills, however, were early impressed with the scientific aspects of the matter, and while they have been often identified by ignorant critics with the earlier devastations, they were in fact most eager and persistent in preserving from harm the great ruins of the Mesa Verde, as well as others, through a series of years, in which they were neglected by the archæologists, ignored by the Government authorities, and sorely threatened by the tourists who often visited them with predatory intent.

There are memoranda of discriminating studies in the distinctive traits of modern Indians. One concerns those who live in pueblos where the "Snake Dance" was the object of a long horseback trip one summer. In another he traces the famous warriors, the Apaches, from the time they were hardy, cunning, and relentless fighters to the forlorn but picturesque remnants that one sometimes meets visiting their old homes. The more friendly but somewhat predatory Navajos he describes in *Hogan* and *Wickeup* as he knew them. He admits that "it is the nature of things that the barbarian shall go down when he stands in the pathway of advancing civilization," but says, "Is it inevitable that the subjugating forces shall be coupled with lies and smirched with national dishonor, born of greed?"

The following bit of experience shows that his usual acumen held him from any undue rating of Indian traits.

I had brought along upon this trip a bright young Navajo who had never before traveled far from his home among the lower mountains and mesas in the heart of the reservation.

The Indian of tradition and the novel is so keenly appreciative of the grandeur of nature that I was eager to observe the first impression upon our brown fellow of this great canyon when at last we should reach it at one of the most profound and awesome points. We came suddenly to the brink at a great promontory looming far out over the profound deeps. He walked forward to the edge exclaiming, "A-la-ha-ni!" which, as one of my comrades suggested, would be fairly interpreted, "Well, I will be darned!" Then he at once turned his back to the canyon, sat down, rolled and smoked a cigarette, and fell asleep. From that time during all the days which we spent skirting the chasm he paid, so far as I could see, not the slightest attention to the outlooks.

It requires but few of the many letters that passed between Dr. Prudden and Clayton Wetherill to indicate the quality of their friendship.

From Clayton Wetherill to Dr. Prudden

Pueblo Bonita, N. M.
February 14, 1900.

Hosteen Nez got in with a bag of mail this afternoon—your letter in the outfit. All my plans have been made with the expectation of accompanying you in whatever trip you wish to take. Have been working for the expedition ever since you returned, trading in the store, working cattle on the range, &c. Have run on to a number of ruins in my wanderings, principally mounds, one good burial mound above Kinklizin, also heard of the ruins down Chaco; don't know what they amount to. Al is married, but I can not get time to go up to see what kind of a varmint it makes of him. Fly and Stanly[2] are being fed on the

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[2] Horses.

San Juan this winter, mules are at the ranch, everything will be in good condition for work on your arrival.

My vocabulary of Navajo words is slowly increasing, I can understand pretty well and can make known what I want by making use of heaps of signs.

We have had no winter at the ruins, but our teams are snowed in on the other side of the divide.

Rich's family has increased by a small female. It's a queer little critter that has nothing to say for itself.

No work on the ruins, but trading is lively and this is a world of itself—five whites and several hundred Indians makes a bully neighborhood.

From Dr. Prudden to Clayton Wetherill

November 19, 1900.

I do not know whether to think of you as behind that counter conjuring dollars from the noble red man or upon the hills somewhere looking after stock. I suppose, anyhow, that you are mostly out of doors and that seems to be a very great advantage to us who hive in houses in this great town.

I have not had a moment yet to think of doing anything to the maps, not even to my celebrated relief.

I am feeling a little as I fancy Rabbit[3] must when he has been all day with one of your packs, because I am in the midst of the revision of a book of eight hundred pages or so, for which pictures are to be made, publishers bulldozed, and things in general made fit.

I have asked the Geological Survey people to send to you directly from Washington the set of Government maps of our country out there. If they reach you in safety, don't fail to sign the receipt and return it because they are, I believe, rather particular about that.

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[3] A donkey.

I hope that they are sending you "The Land of Sunshine" from Los Angeles.

Please remember me to the Chatelaine of the Chaco, to Richard, and to any one who might remember the passing tramp.

September 24, 1901.

I had a short season at the Grand Canyon, and I have now been home a week and settled in the usual routine to which one certainly does not take very kindly at first. There are advantages, of course; hot and cold water and plenty of it and all that electricity and steam can do for one, but, after all, the skies are muddy and the air sticky, the streets odorous, and the trolley car but a poor substitute for the horse. However, half a hundred problems which were awaiting me give little time for fretting.

I should be glad to hear from you how things go on, and I am especially eager to know whether Win gets his license and is at the Two Grey Hills again.

I find myself still wishing that the Navajo Mountain region were conquered and hoping that we may be able to make a dash for it next season.

February 7, 1902.

It seems far enough away from next summer as I look through the pile of professional work in front of me, but still I am beginning to ponder over the hot country.

I wish that you would tell me a little more about the trip which you took last autumn over towards Marsh Pass. I should like to know just where you went, what sort of country you found, and whether the way seems entirely clear to you for us to pull out very early next July, from Mancos via Bluff City and down to the mouth of the Chinlee, then perhaps up through Marsh Pass to the Navajo Mountain region, and then back to scour the rough country which empties into the San Juan. Then back to Bluff

—terrible thought—possibly home directly, or mebbe so over the summit of Blue Mountain just for the sake of peeking off into that region north. How does this strike you, and are you liable to be at Mancos in the early summer?

How did you come out with the blankets in the Rio Grande country? What are you now—ranchman, cowboy, teamster, guide, horsedealer, horse-trainer, or bull-whacker?

December 1, 1902.

It seems at least a hundred years since I left you in the grocery store at Durango and started out for a few days at the Grand Canyon. I am curious to know how it fared with you getting back over the range and what became of Fred Hyde. I am wondering whether you have all the Hyde outfit horses on the range yet, and whether you have done anything more to your palace. I imagine that it is wintry weather on Clear Creek and that you are perhaps driven into the San Luis valley. We have had no winter as yet, scarcely a frost.

I pulled into New York late in August, and have been so hard at work with sundry investigations since then that I hardly know what the world has been doing. I have, however, got the general description of our field studies blocked out and the map practically done. I have seen Pepper once and Talbot Hyde once, just for a minute; but nobody else who is interested in the open country. Are your mother and the Masons at San Juan this winter? I suppose the youngster goes to school somewhere.

Let me hear how the winter begins for you and which one of your numerous specialties you are going to follow.

April 15, 1907.

I was mighty glad to hear from you again. "Moonlight Water" sounds familiar, but I wish you would tell me exactly where it is. I have just slipped the connection. Is it Buck's place on the San Juan?

This is great news you tell me about *the girl.* While it makes me feel lonesome to see the ranks of good old bachelors dwindle, I yet can not choose but congratulate you, and wish that I could be at Mancos for the great event to throw things at you when you start off across country.

I don't feel so certain about your giving up wandering, and I should be might sorry if you were finally to take root. Not five minutes ago a man left me who is talking about getting up a little party to run over some of the country west of Mancos, if you could go with him. I don't know whether there is anything in it, but I wish you would keep me posted a bit as to your whereabouts, and whether you are going to be permitted, if you will, to take moderate trips with people over the land. I think myself it is high time that you quit those preposterous journeys such as you took with me, and the other worse ones you have had later.

I can hardly imagine you settled down as a man of family, smoking your pipe in your doorway; but I should think a fellow might be very cosy with a good bungalow in some of those charming nooks around the upper Rio Grande.

Please give my regards to your mother and to John and any of the other good folk; and if I might, I should like to send a word of greeting to the lady who has taken pity on your wandering and forlorn state.

To complete the story of his western friendships, some material of a later date is placed here, since he continued these trips as long as possible after his retirement. He gradually abandoned the physical effort of long excursions in the saddle, and shortened the number of weeks of work, but as late as 1915 we find this letter to Clayton Wetherill.

From Dr. Prudden to Clayton Wetherill

April, 1915.

How about it? Is it written in the book of Fortune for 1915 that you are to join me in finishing our stunt on the "unit type," in the early part of the coming summer?

I am not quite absolutely certain that I can get off, but it now seems likely. How would it be for you, say from about the middle of June till about the first of August? How early in the season can you dig out and get over the hills to Durango with the outfit?

I want to get over again on those high lands where we were last time, or beyond, say on Bug or Pierson Mesas or thereabouts, south of the Monticello road, and see if we can find a good typical small ruin, not too much disturbed, and clear the whole thing out—house, kiva, mound—and see what we shall see. We may tap one or two more kivas, just to increase our experience, and perhaps to take a look somewhere at a boulder site of our type.

I shall be eager to hear from you as to whether you can go; if the wagon is still in commission; what stock you have, etc., etc.

I have a notion from what Kidder wrote me that he has plans with you after the first of August when I must be back home anyway.

Write me when this penetrates your snow-drifts, and I will decide as soon as I can and let you know. If you have other plans for this time, let me know and I will change mine.

Cordial regards to all the folks.

In November, 1921, Dr. Prudden's appreciation of this congenial friend found words in a letter to Mrs. Clayton Wetherill.

From Dr. Prudden to Mrs. Clayton Wetherill

I did not get the telegram, and first heard of Clayton's death from your letter just received. My last letter from him was in such good form and spirits that I was hoping he was out of the woods. I can only suggest by this word of sympathy my realization of your great loss. My experience and enjoyment of the Southwest country through many summers were so largely bound up with Clayton's helpful and genial comradeship that I shall hardly think of it again as the same land always beckoning one to come back.

Clayton's intimate knowledge of all the great country from the Rio Grande to the Colorado and beyond, and especially of its aborigines, was so vivid and his experience among the ruins was so great that his passing is a serious loss to American Archæology, which he and his brothers, first and last, have done so much to foster in a quiet and unostentatious way.

But those of us who knew him best as a master leader, full of resource in all the ups and downs of those great desert spaces, ready for any emergency, knowing the secrets of the land better than the Indians themselves, and always the cheerful and helpful comrade,—we shall miss him more as a friend than as the unassuming worker for the science he had come to know so well. His acquaintance all over the vast country which we ranged was prodigious. Ranchers, prospectors, traders, Indians of all sorts—Navajo, Ute, Pueblo—responded always with pleased smiles and welcome to his cheery greeting. His knowledge of the country and its trails was superb, and he easily led his horses to watering places. His energy and endurance seemed at times without limit.

All this you know better than any others, and I only write it to mark my love and appreciation of so genial and helpful a friend and comrade of the open road, on so many strenuous journeys in the service of science.

From John Wetherill to Miss Prudden

Tucson, Arizona, 1925.

I feel that there is nothing I can do that will begin to pay him for what he has done for my brothers and myself. The last trip I made with him was in 1910. A messenger came to us in Marsh Pass two hundred miles across country telling of my brother Richard's death. He stopped his trip and went with us—Clayton and myself—to see what could be done. In those days it was horses and wagons. We drove night and day until we reached Bonito where with his help we were able to stop some of the injustice that was being done. He was always to be found when we needed him the most. I will write you again when I have had time to think of all I want to say. I cannot tell you the grief we felt on hearing of his death, as we did not know of a serious illness.

It was a thrilling ride of which John Wetherill speaks, and revealed how closely Dr. Prudden identified himself with these friends. When the word that Richard had been shot by an unfriendly Indian was brought by a runner to his two brothers, Clayton and John, they were helping him in what he hoped would finish his researches in the unit type of ruins. He immediately abandoned that summer's expedition, and, by a succession of fresh horses and mules, the trip through a desert country in the hot season was accomplished in a few days. It was too late to help much, save as a defender of the good name of Richard Wetherill. Dr. Prudden sent material to the local press and prepared a paper to send to Washington both as a vindication of a man he admired and respected, and as an arraignment of certain types of Indian agents. He had satisfaction in writing it, but never felt that much was accomplished by his attack upon short-sighted methods in dealing with human problems.

Dr. Prudden's nephew, Theodore Mitchell Prudden, of Hingham, Massachusetts, has a letter written in 1921, which gives a brief account of his business interests at the Grand Canyon which were a part of the western vacations.

From Dr. Prudden to Theodore Mitchell Prudden

In the early days of my going West, now a good while ago, I became fascinated with the Grand Canyon and its region, and I used to go there to rest up from strenuous summers in the saddle, ruin-hunting, and other rambles. After a while I fell in with a group of Vermonters, who had drifted out there, bought a group of copper mines down in the Canyon and a small hotel on the rim, and had organized the Canyon Copper Company. This was doing a fair business, and while I was never greatly impressed with the mine as a money maker, it did pay mighty well for a series of years. I finally got quite chummy with the group of good fellows who were running the affairs, and was glad to take some stock, more to establish a sort of headquarters and summer home out there than on lucre intent. So there on our own land on the rim of the Canyon, I had my khaki tent year after year near the hotel where I could go behind the desk and help myself to a cigar and recommend them by the box to tourists, and plan for them long and expensive trips (profitable for us), etc. etc.

But times changed. The boys got uneasy for larger enterprises. Copper went down. They built the big swell hotel at Bright Angel where the railroad ends, and began to freeze us out. So we sold the hotel property, keeping the mines and the mill site on the rim of the Canyon. For both we have our patents almost completed, although the property is now within a National Park.

He wrote this letter to explain to his nephew a plan for making over this stock to him, and in the process of completing the transaction opened correspondence with two members of the company who were living then at Phoenix, Arizona, from which some paragraphs may be quoted showing how he cherished the remembrance of his days at the Canyon. Both letters are also written in 1921.

From Dr. Prudden to Mr. John Page

It was a bully letter which you sent to me, and I was mighty glad to hear what you were doing and thinking about these times and to learn that Smith is with you. I don't know anything I should like so much to do as to sit down with you and him on the old front veranda or around the fireplace after the tourists had gone to bed and talk about everything.

Can't you imagine Smith, having palmed off a pocket full of those awful cigars, coming around with a smile of satisfaction to take his place in the circle? And you with your big boots and covered generally with mud, up from the mine? Or Smith in hungry from a chase after lost stock out beyond the Coconino Wash?

Whatever becomes of the investment, I shall always feel that we had a good run for our money, and I have got many interesting memories which I wouldn't cash in for the price of the mine.

From Dr. Prudden to Mr. Smith

It is worthwhile getting up a little business to get the chance to hear from you and John Page again and get the gossip.

It is only to have my affairs in a little trimmer shape if I should be run down by some of these accursed motor cars, that I have transferred my right (but not my interest) in the old company which you and Page have served so valiantly for all these years. My nephew is a mechanical engineer of Yale; a good fellow, much interested in the tales I have told him of that bunch of New Englanders teaching cow-boys cow-boy stunts on their own ground, and wont worry the officers of the Company about clearing up its affairs till they get good and ready and the time serves.

I should sure like to have half a summer over again in the old khaki tent on the Rim, to hear your tales of chasing runaway stock over toward Red Butte, to see you puddling the muddy water in a hot shower at midnight, down at the reservoir with a hoe and a slicker.

He always corresponded with one friend of the Canyon days, whose name has already appeared in the story, Mr. J. M. Goulding, now of Paso Robles, California. Extracts from letters written by Mr. Goulding in 1924 may fittingly close this attempt to bring a picture of western life and friends to those who only knew Dr. Prudden in the midst of city life.

From Mr. Goulding to Miss Prudden

April 26, 1924.

I am one of those of the Arizona trails to whom the dear Doctor's gentle, scholarly, pure mind was a marvel and a charm, and his human kindness and interest in my little cares made him as dear to me as an elder brother; the world will not be the same to me now that he has left it.

. . . .

May 27, 1924.

I can see just as clearly as if it were yesterday the Doctor riding his horse near by—usually riding behind me, letting me proceed as "guide," as at that time I was working mostly as such, but I realized very well that he had no use for any guide about that tourist haunted section of Arizona, and engaged my "services" probably out of courtesy to our custom of not letting out horses &c. unattended. Even though he took a financial as well as most warm personal interest in our little copper mine and hotel effort, still in his gentleness and courtliness he would observe the relations of a hotel guest to his hosts. He would not, however, have a room, but had us put up a tent for him where he might have a lovely view of the Canyon, and be undisturbed by the chatter of a hotel when he wished to be quiet. You know I did not have the long trips with the Doctor such as the Wetherill boys had; I always envied them. The Doctor began his Canyon visits only after he began to find the desert rides too hard. I think he only went once with the Wetherills after I knew him, and then he wrote me disgustedly of his making part of the distance sitting in a buckboard.

July 3, 1924.

I have a picture of him sitting at the door of his tent at the Canyon, the tent was always set up for him at a spot he chose—the spot, in fact, whence Thomas Moran painted one of his best pictures of the Canyon—a convenient distance from our hotel. He often spent all day there or in long walks, appearing at the hotel for supper, and many of my choice memories are of his calm, wise, and often amusing remarks as we sat on the hotel porch watching the marvel of the eastern sky across the Painted Desert. The shadows would reveal buttes and escarpments of the desert and the Canyon, which during sunlit hours merged into the common glow and were unsuspected. Then the stars, or the moon, and finally the Doctor would reach for the little camp lantern he always had, step into the hotel to light it, and go striding off down the hill among the great pines toward his tent.

. . . .

October 19, 1924.

I wish I *could* write—the Doctor helped me to write the advertising folder of our Grand View Hotel, and he let me suggest titles for the pictures in his book "On the Great Plateau." Several of the titles are mine, and I am proud of even that. I often grieve that I did not preserve his letters.

I wish there were any of us Westerners who learned to love him so well who were fitted to write something of what he meant to us and of his ways when he was out in the open; but I suppose there is no way for his friends to ever catch that phase of his life, any more than we can, except dimly, know about his life as the city and the world knew him. Yet I recall, as I went with him once through the Rockefeller Institute, that the nurses, patients, and all who received his greeting in return for their respectful salutations had in their eyes much of the same expression with which we looked up at him out here; humanity is much the same, I guess, whether city dwellers or desert denizens "under the skin," and the Doctor I am sure was just *himself*, wherever he was, and all men recognized him for what he was, respected him at sight, and if privileged to know him, added their warm love to their respect. A doctor practising in Ann Arbor, Michigan, visited the Canyon once, and told me that he had been in Dr. Prud-

Khaki Tent on the Rim of the Grand Canyon of the Colorado River

den's classes at Columbia; he spoke of the Doctor's sarcasm and how it sometimes cut, but at the same time said how it was used only for the student's good, and how all students admired him. It struck me as being the only thing approaching criticism that I ever heard anyone express; but I have seen the gushing tourist receive sometimes their due in just a word or a cool manner when they imposed on the Doctor's friendliness, or displayed traits that were insincere or despicable, and Clayton Wetherill told me how the Doctor would with a look make an Indian ashamed, when the Indian (as sometimes happens with semi-educated Indians) was forward and flippant. The Doctor must have been a wonderful teacher; he would have made a wonderful general—simply another demonstration of the old adage that he who is master of himself is master of men.

He seemed to live in the realm of truth and fact only. I never knew him to be impatient with a man's ignorance or mistakes, but if a man assumed to be what he was not or to know when he did *not* know, the Doctor's disapproval, expressed without words, was a lesson to such an offender. At the Canyon he did not care much for riding, and as everyone else was always riding, the Doctor took many long rambles afoot, alone, and often in the evening would tell us of some find of his, describing the location of some cliff-dwellers' walls or mounds that we had not seen. But as a guest of our struggling little hotel, he sometimes seemed to feel he ought to do as the other visitors did, and patronize our stable, guide, &c. (even though he was a stock-holder in the enterprise). At least, I thought that was why he did it, and I was the gainer, as he sometimes engaged me with horses for a day's ride, the time being spent usually by him in showing me, the supposed "guide," the little trails and relics and new out-looks that he had already found afoot. We did not often spend the night out; now and then we would sleep at the copper mine camp down in the Canyon, and once we slept at Dripping Spring, the permanent camp of old Louis Bouchet, an interesting French pioneer; so that it was mostly at the little hotel that the dear evenings were spent where, as we watched the sunset lights over the Canyon and the distant desert, the long quiet talks occurred.

LATER YEARS

Resignation—Painting of Portrait—Rockefeller Institute, Estimates from Dr. Flexner, Mr. J. D. Rockefeller, Jr., Mr. Smith —Letter to Mr. Henry James—History of the Rockefeller Institute—Archæology—Tribute from Dr. Kidder—Vacation Interests—Unabated Mental Powers.

HE was a little under sixty, the age he had set to free himself from the exacting duties of teaching and administration, when a break in his long overtaxed physical and nervous strength forced his retirement from the department and the college to whose development he had given such valiant service. His eyes had for some time been paying the penalty of too long-continued application to the microscope. It was hard to face such a sudden change in his life, but few knew what a mental struggle lay behind the quiet dignity with which he accepted the situation and gave over the position into which his very life had gone for thirty years. Dr. Wadsworth, who was closely associated with him through this time, was impressed with "his wonderful philosophy, his charity for all, and his remarkable appreciation of different points of view."

There was no lack of those expressions of genuine regard that help a man through the trying experience of such a change. First, in June, 1909, the following resolution of the faculty at Columbia was made:

Resolved, That upon the retirement of Dr. T. Mitchell Prudden from the professorship of pathology, in the College of Physicians and Surgeons of Columbia University, his colleagues of the medical faculty hereby express their sincere regret for the loss of his services and record their deep appreciation of the superior work he has done in behalf of the College during the past thirty years as teacher, author, and investigator. As head of the laboratories of pathology and bacteriology, Dr. Prudden with signal ability and untiring devotion has organized and developed a department eminently successful in the training of students and in the promotion of important investigations. Dr. Prudden's quiet but not the less effective influence, extending, as it does, far beyond the limits of the University, has stood for the highest ideals of scientific medicine and the advancement of public health. This influence and this work will remain a precious possession of the College of Physicians and Surgeons.

There was talk among his close laboratory associates of some suitable form of expression of their genuine desire to do him honor. A Festschrift was proposed, a dinner was discussed; but neither met with his approbation. He finally consented to allow the plan of an oil portrait of himself to be painted for presentation to the college to hang in the lecture room where he had been wont to meet with successive classes. Mr. Sergeant Kendall was engaged as the artist, and a letter signed by five of his young associates, Dr. Hodenpyl, Dr. Wood, Dr. Larkin, Dr. Ewing, and Dr. Hiss, was sent to one hundred and fifty of his friends and colleagues with a suggestion of a small contribution from as many as were inclined. The letters in response soon assured the $3000 necessary to defray the cost of the portrait. They were eventually turned over to Dr. Prudden that he might see with what genuine appreciation the responses came. We can but give three samples to show the spirit of all.

From Dr. Wm. Osler to Dr. Hodenpyl

January 19.

I am glad to learn that Prudden is to have his portrait painted for the school. What a fine record he has! I am proud to be among the number of contributors. I hope he may be more successful than I in having his fine features reproduced for posterity. The artists have played the Devil with my "greenery-yallery" visage. Sargent is, on the whole, good. I am taking a winter off; partly work, partly play. My sincere regard to Prudden and the members of the committee.

From Dr. Trudeau to Dr. Hodenpyl

Saranac Lake, January, 1909.

It gives me great pleasure to respond to the invitation to participate in the presentation to the College of Physicians and Surgeons of a portrait of Dr. Prudden. His services to the College, to science, and to the medical profession, make such an expression of the esteem in which he is held but a just tribute to his merits. In common with many others, I owe much to Dr. Prudden. In the early days of my scientific work he was both helpful and patient in teaching me, encouraging me by his interest, while guiding and controlling my impulsive and often ignorant scientific enthusiasm in the light of his deep learning and calm and dispassionate judgment. For many years he has been a good friend to me with all that relation implies, and I have for him an unbounded admiration and deep affection.

From Dr. Biggs to Dr. Hodenpyl

New York, February 18, 1909.

I enclose my check to cover subscription to the portrait of Dr. Prudden. I consider it a great privilege to be allowed to participate in defraying the cost of this testimonial. There is no one in New York who has been so helpful in advice and suggestion or who has contributed so generously of his time and labor to the work of the Department of Health during the many years of my connection with the Department, as Dr. Prudden.

With kindest regards.

Those familiar with the library at 160 West 59th Street have been wont to see a large silver loving-cup upon the top of one of the bookcases, but few have known that the text of the presentation speech from one of his last classes at the "P and S" has always been kept within.

From Constantine J. MacGuire, Jr., to Dr. Prudden

Saturday, May 15, 1909.
120 East 60th Street.

The second-year class of the College of Physicians and Surgeons has a keen appreciation of your efforts in their behalf during the past year.

In order to express this in some small way it desires to meet you on the morning of Monday, the seventeenth of May, at five minutes after ten in the upper lecture room at the College. If you cannot be present, please notify me.

PRESENTATION OF CUP

May 17, 1909.

Dr. Prudden: The second-year class has gathered here today to try to express in some slight manner our feelings of appreciation and gratitude. We are but one of many classes that have come under your guidance. The first and every succeeding class, doubtless, felt as we do, proud and fortunate in having had the opportunity of studying with and under so distinguished a pioneer in the scientific medical world. And now it is for us, the last class, to try and express the feeling of all. Your name and works we have long known; but our personal association has been, unfortunately, very short. In the last three months only have we realized our opportunity. With help for the plodder, with prodding for the laggard, and with a touch of the fine adjustment for those who would not see, you came among us, from our memories never to depart.

For me to express, even in a faint way, the feelings of the class is impossible. All I can say is that in our humble ignorance of the things you have tried to teach us, we have appreciated your every effort, and now in recognition of that appreciation and of our personal regard, we present you with this cup, a small token of the affection of every man in the class.

Response

Gentlemen: I wish that I had gifts of the tongue so that I might adequately express to you my appreciation of the kindly words so gracefully spoken, and could tell you how much I value this beautiful gift and token of your good-will. I shall value it because it is beautiful; I shall value it because you have given it to me; and I shall value it because it seems to me to indicate that the ungentle sarcasms with which I have been wont to beguile the long road which we have traveled together, especially directed towards your masterpieces of the illustrative arts, but always, I think, strictly pedagogic in impulse—that these all have been forgiven, if not forgotten. I can not make a speech, and can only say, beggar that I am in words, to my students and my good friends, I thank you.

Mr. Low was no longer President of Columbia, but his recognition of the service given so unsparingly for thirty years was a gratification just then.

From Seth Low to Dr. Prudden

January 25, 1909.

I was not a little moved at a recent meeting of the Trustees of Columbia University to hear that you proposed to retire from active service at the end of the current academic year. I can well understand it, and yet I regret that one who has reflected so much credit upon the College of Physicians and Surgeons should no longer be numbered among its active workers. I had not wished a moment to pass without saying this to you, but circumstances have prevented me from doing so until now.

With every good wish.

From Dr. Prudden to Mr. Low

February 3, 1909.

I thank you for your kindly appreciative letter relating to my retirement from active service in the University.

We over here in the Department of Pathology have not forgotten, nor shall we soon, how much we were stimulated and encouraged at a critical time by your personal interest in the Department, and by the substantial pecuniary help through which alone we were finally enabled to develop the newly-discovered phases of science which have been of such signal service in the prevention of disease and in the teaching of medicine.

He was eligible for a pension amounting to one-half of his salary at retirement, which was immediately granted him. In 1915, President Pritchett of the Carnegie Foundation, in making a study of the pension system, asked certain questions, the replies to which furnish a personal statement about his economic status and his interests after retirement.

From Dr. Prudden to Henry S. Pritchett

August 15, 1915.

I regret that my response to your communication of July the twentieth should have been delayed owing to my absence from town and from the mails.

I will answer in order the queries of your letter.

I have not at any time missed my teaching occupation nor have I regretted my retirement at the age of sixty, at which period I had for years cherished the purpose of turning to new fields.

My time since retirement has been fully and most happily and satisfactorily occupied. First, with the duties which I have been glad to fulfil, as one of the Directors of the Rockefeller Institute for Medical Research, to which I have each year given considerable time. Second, I have been engaged in a series of studies in American archæology, to which my vacations have long been devoted. Third, I have given considerable time and attention to the public health service as a member of the Public Health Council of the Department of Health of the State of New York. Fourth, I have devoted considerable time and study to the investment and reinvestment of the modest savings of a college professor unmarried and not unduly addicted to expensive practices and habits. Fifth, I have enjoyed a certain degree of leisure, which an excessive amount of teaching and a heavy load of administrative work in my college position made impracticable to secure during my official career.

The reduction of income from a teaching salary to a retiring allowance in my case has not been inconvenient because I have been able, by careful attention to investments and good fortune in these, to maintain my income at about the same level as that which I enjoyed when on a full salary.

. . . .

Dr. Flexner's article furnishes an introduction to what was the chief interest of Dr. Prudden's later life.[1]

Dr. Prudden was one of the group of advisers of Mr. Rockefeller and his associates consulted on the creation of an institution for the investigation of disease, and he became one of the original members of the scientific board to which was entrusted the conduct of the The Rockefeller Institute for Medical Research when founded in 1901. Dr. Prudden was chosen first vice-president of the board and first chairman of its executive committee, offices which he continued to hold until his recent death. Although repeatedly pressed to accept the presidency of the board, he resolutely refused the election. The services rendered to the institute by Dr. Prudden far exceeded in scope and devotion the official positions which he held.

Dr. Prudden's professional life in New York covered more than forty years, and was spent in large measure in forwarding the public welfare. But so self-effacing was he that it was only to his family, intimate friends, and a coterie of his professional associates that the nature, variety, and extent of his public services became known. The aid he rendered to the departments of health of the city and state of New York is written large in their history; as a student and teacher of cellular pathology and bacteriology—two branches to which modern medicine owes very much of its recent advances—he ranks among the leaders; and many of his pupils now carry on the high standards and wholesome traditions which he helped to establish in the country. After his retirement from the professorship of pathology at Columbia University in 1909, Dr. Prudden continued to exercise his humanitarian impulses and his interest in medical research in connection with the Public Health Council of the State Department of Health, of which body he was an original member, and with the Rockefeller Institute to which he came daily, and participated in many of its activities. To his many other gifts, Dr. Prudden added an exceptional administrative capacity and executive acumen. Hence he served many important enterprises of philanthropic and scientific nature during their formative and stressful periods in a manner which contributed valuably to their ultimate successful issue.

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[1] Simon Flexner, "Biographical Sketch of Dr. Prudden," *Science*, November 7, 1924.

To one whose work had been pathology, whose play had been archæology, and whose aim had been prevention of disease, the opportunity to use his time and strength in fostering plans for medical research under such a magnificent equipment as the Rockefeller Institute offers, was an immeasurable satisfaction. He was too wise to ignore the manifest warnings of physical limitations, and always thereafter aimed to keep himself free from obligatory responsibilities; but the resources of his ability and experience were at the service of an enterprise that made possible researches for which he had so long been laying foundations.

From the beginning there were frequent notes to Dr. Holt and others in regard to the use of the plot of ground with suggestions showing far-sighted thought for future needs. Many hours were given to careful study of specifications, and over the plans for each new building many long evenings were spent, for his eye was keen for architectural details. Yearly budgets of the Institute had the benefit of his seasoned practical judgment. The utilization of the Institute property for flower gardens and playgrounds was a call to him to investigate such enterprises and to study out the best plans for both. During the war, his strength was used to its limit to contribute to every emergency where a shortage in personnel showed a need, and the enlargement of the equipment to meet the war demands had his enthusiastic support. By the courtesy of Dr. Simon Flexner and Mr. Henry James, Jr., who left the position of Manager of the Rockefeller Institute to enlist as a private, we are allowed the use of the following informal letters of 1918-1919.

From Dr. Prudden to Mr. Henry James, Jr.

October 28, 1918.

I have your welcome and interesting letter of September 9, woefully delayed, and with a rather superior air have been conveying your salutations to the folks at the Institute. Of course, as I am mostly associated now-a-days with colonels and majors, I let it be inferred that you may be at least a general or something like that. But for myself I greatly enjoy the idea of your privatcy, and would give as substantial a fraction as might be of my Institute salary to see you come to attention and salute on all the frequent appropriate occasions. But perhaps ere this you are the salutee. I envy you being in it anyhow, and shall be eager by and by to hear how it has all impressed you since you dropped out of the multifarious tranquillities of this job into war. I say "this job" not because I have aspired to fill the void of the promoted manager but because the job and I have been hanging around this place forenoons ever since you left. I putter about, and prod and counsel Smith, and jolly along various halting or querulous brothers and sisters of the staff and force, and weep and rail on discovering oversights in the latest post-Jamesian budget. And now while Simon Flexner is away in England (or may be in France) for three months,—don't fail to salute the *Colonel* if you see him,—I am serving as ballast to keep the good ship Science on even keel. Being thus accounted for, I turn to the Institute.

Shut your eyes and you will see its essentially unchanging features. But the lines of small trees—your trees—up the drive and along the front have leafed out luxuriantly this summer so it is quite bowerie-like as you come down 66th Street. Then patriotism has grown so keen that we were no longer content with the modest and measurably meager flag—your flag—over the door, which kept rolled up half the time in the zephers of Avenue A. So we have planted a seventy-foot flagstaff, or a gum pine, mid-all-ways in the northern front lawn, and a big unhampered flag now floats free over us. And we have a seventy-five-star service flag over the door flanked at either side by poles for the honor of visiting Allies. Otherwise, we are visibly the same placid islet in the surge and dust and smell of the great East Side.

We are not militarized to a dem-demnitian degree. Colonel Flexner is the Chief, with an adjutant to keep all soldiers' records and transmit orders to various subordinate officers scattered about loose. Wherefore, Howells—your Howells—faded away early in the year.

The classes for the soldier doctors of all kinds have grown in size and in scope. We had to enlarge the laboratory at the foot of the bluff, and Miss Holloway has become a professor, showing enlisted technical women how to cut sections, and Miss Moclair is a professor, too, and shows other groups how to mix and cook germ stuff. Cole has had to take a class of a dozen women, too, assigned from Washington, to show them, so great is the dearth of men, how to do things for pneumonia people.

In the War Demonstration Hospital, things move along in about the same way. You—enlightened you—will rejoice to hear that we have muslinized the drop windows in the wards and elsewhere. We freshened up the entrance with a circular driveway and some grass and bushes, and transferred the door-man to the stock room. But the portly form of Uncle Dudley still sits stolidly in his armchair within the door, from which I think he has never moved by day or night since last February. At least not by day. What he does, I could never learn. I am sure he would not rise to open the door if the Queen of Sheba were to come by with all her retinue. Your pet still putters about the lawn and flower beds, and his assistant digs up little weeds around the place now and then, and they both seem to have a pretty good time, which is something these days. We have an efficient superintendent of nurses and housekeeping down there now, and the place seems to move on smoothly under the budget—your budget—of nearly a year ago. Only those desperate pipes at the top of the corridors—your pipes—still spring a leak every few minutes and drip hot water upon the heads of unconsidering visitors.

We got through our annual meetings after a fashion. The Corporation met down town with only Mr. Murphy with a fist full of proxies representing the Trustees, and Holt and Biggs and I, the Directors. We had got together a collection of reports from the staff which seemed quite creditable, and the Manager's report, though of course we could not rival your cultured periods and convincing plans, hustled together a few reports of divisions, clapped a mountain of figures on top of them as you used to do, and let it go at that.

Nearly all of our leading lights have now gone over to the military, Doctors Cole and Van Slyke being the last of the old régime to succumb, and they are now awaiting their commissions. I have been too busy since getting back from the country to read up on the etiquette of the relationship of a mere civilian and his military heroes. But as it has been warm enough through October to go bareheaded around the grounds, I have not fairly encountered the problem of saluting, if such exists between us.

Princeton still worries along in the shadows of a weary world, grown wearier as the paucity of labor and the blight of influenza have struck Jersey. TenBroeck has gone to the war; Little and Brown and Smiley linger on the job; Shaw has had to leave, leaving the director a bit handicapped. But the potatoes grew, the potatoes of your planning, but somewhat curtailed in acreage. Everybody concerned with that twelve acres is regarded in our circle as a hero. We are just finishing up a presentable dwelling-house on the Moore, or as I think you called it, the Van Dyke site, chaste and comfortable in aspect. We don't know yet who is going to live in it. The Theobald Smiths haven't yet got settled in their stately mansion because nobody can get help any more, and so I believe they are sort of camping out still. We have felt compelled to draw in the lines on landscape architecture since labor was not available, and we don't seem to think that at this juncture it is necessary to push even so moderate an undertaking as Mrs. Farrand's plans. So Princeton lies in the eddies, and still exists.

It is rather strenuous times now, with influenza grabbing one and another of the various folks, but we have organized a system with a visiting-nurse and daily inspections and the like, so that the situation is fairly well in hand.

But lest I should risk the revision of your kindly expression of regard by intolerable garrulity, right here I am . . .

From Dr. Prudden to Dr. Flexner

October 25, 1919.

You are so accustomed to dealing, or shall I say hobnobbing, with queens and other distinguished people that I hesitate to send these drafts over to Dr. Holt without your visé, and you have already written personal acknowledgements which should not conflict.

This man Nicholson, at the Admiralty, does not give his title, and he may be, for aught I know, a page or a pauper or a prince. How should he be addressed, or should this be addressed to My Lords Commissioners of the Admiralty, explaining that the letter has been received from one Nicholson?

From a letter written to Dr. Prudden while he was ill at the Presbyterian Hospital in May, 1923, by Mr. John D. Rockefeller, Jr., we take the following paragraph:

> I have long wished that there was some way in which I might express to you the very deep appreciation which both father and I have felt for the service you have rendered these many years to the Rockefeller Institute, so efficiently, so modestly, and so freely. No one man related to the Institute, aside from those officially connected with it, has made a contribution comparable to your own, and no one will ever fill, in the full sense of the word, the place you have so long occupied and which I am hoping you may soon be well enough to return to.

If we add to this cheering message to a sick man the following excerpt from the report of the Business Manager, Mr. Edric B. Smith, submitted to the Corporation of the Institute at its annual meeting October 17, 1924, an idea is gained of the contribution he made to this major interest of later life:

> It is appropriate to make further mention of Dr. Prudden because of his intimate association with the administrative affairs of the Institute. As chairman of the Executive Committee, as a member of the Budget Committee and of the various sub-committees chosen from time to time to deal with matters of policy or of construction of buildings, he exerted a profound influence in moulding the organization and structure of the Institute. Not only in matters of large import but in the details of the daily routine—small in themselves, but all a part of the problem of administration—he took a keen and sympathetic interest. His kindly criticisms, his insistence on clarity of statement in the drafting of estimates or reports, were a stimulus to better effort. In times of emergency, when sickness or death overtook the appointed officers of administration and when the forces of the Institute were depleted by the World War, he quietly assumed the management of office affairs, though in his poor state of health it must have been a heavy burden for him to bear. He won and held the love and the respect of the staff and employees of the Institute. His friendship extended to the neighborhood folk and their children, for whom he took great delight in planning and encouraging the development of the gardens and playground. In all of these activities he gave of his time cheerfully and without stint. He has set an inspiring mark in the standard of service.

His affiliation with the Institute impelled him to continuance in the field of popularizing science through two papers, "On the Trail of the Yellow Fever Germ, from the Notes of a Bystander" (1920) and "New Outlooks in the Conquest of Disease"

(1921). They were both published in the *Review of Reviews,* and were marked by the charm and clarity of his best literary vein.

The identity of the "Bystander" did not appear upon the first article, but his style was unmistakable to those who were familiar with his earlier writings. In the second, he presented chemo-therapy in a succession of word pictures as vivid as those he used twenty-five years before in his Yale address, under a similar title. From his skilful opening with an apt Chaucer quotation to his portrayal of the "vision and lure of the devotees of this far-reaching promise in the conquest of disease" at the end, the paper is fascinating.

The natural result was that he should undertake a history of the first twenty years of the Institute with which his connection had been so close from its conception. He began it with genuine enthusiasm, and, but for the handicap of long intervals when he was too ill to work, would have completed it by 1922. It was not until the winter of 1923-1924, that he was able to resume this most congenial task for a short time each day. He had virtually completed seven of the ten chapters for which he had planned when he suddenly laid down his pen. Those who have seen the unfinished manuscript report as good and interesting a piece of work as anything he ever did. Further effort to put the work of the Institute "on the map of time"—to borrow a phrase from one of Dr. Flexner's letters to Dr. Prudden about it—must wait for someone to whom its completion will be a labor of love. We are allowed, however, the use of a brief résumé of the field occupied by the Institute, prepared in 1923 by Dr. Prudden and addressed to Professor Henri Reverdin, Expert, Committee on Intellectual Coöperation of the League of Nations, Geneva, Switzerland.

The field in which The Rockefeller Institute for Medical Research is largely centered may be designated biological research as related to medicine. In this wide field, marked everywhere by an intense intellectual activity, which found its early inspiration in the outlooks opened by Pasteur in showing the significance of lowly forms of life, and to which the remarkable triumphs of research in physics and chemistry have so largely contributed, one may perhaps wisely select as the dominant change during the past decade the growing conviction of the unity of science and the closer approach in aim and coöperation of the various phases of research.

Physics and chemistry are going forward hand in hand. It is now clear to biologists that physical and chemical processes in large measure underlie and sway the manifestations of life. And while this wider conception of the field of biological research is not new, the firmer foothold which it has gained in the purlieus of the laboratory and practical medicine serves to signalize this period of intellectual activity.

This heartening condition is not due to new methods or to the influence of public opinion but apparently to the natural development of knowledge and the growth of the scientific spirit, which in so many phases of research found new impulses at the close of the last and the beginning of the new century. If this scientific spirit can be fostered, and the devotees to science will hold in view as a subsidiary though an important factor in their work the education of the public in their inspirations, aims, and achievements, progress along the present fruitful and promising lines may be confidently anticipated.

Research in biology as related to medicine seems to be deserving and receiving more and more attention among the educated classes, and this tendency will be the more likely to continue in proportion as the accomplishments of research are of intrinsic importance and receive popular exposition at the hands of its devotees. At present, popular exposition lags far behind scientific achievement.

The present interest in medical research is indicated by the vast number of legislative appropriations for the purposes of health organizations and special researches, by gifts, prizes, and endowments by private individuals for various phases of investigation.

If the saving of human life can be reckoned in dollars, the researches in biology relating to disease, prevention and cure, are each year of almost incalculable value to the world. If for no other reason, there is need for more and more and ever more support of such research as relates to medicine and to the fundamental disciplines of physics and chemistry, which seem destined to play so dominant a rôle in the future conceptions of the nature of life and its processes.

The recruits for the devotees to biological research come largely from the universities, and in spite of the few exceptions in the case of the larger endowments, the careers which these phases of research offer are sorely handicapped by the prospect of poverty, which must be faced unless support is won by large sacrifice of time and energy in the subsidiary profession of teaching. This difficulty can be in a measure overcome by adequate endowment of research and by its conduct under the supervision of leaders of experience, wide vision, and trained sagacity. With few exceptions, the career of workers in these branches of research is one of continued self-sacrifice, without provision for adequate family support or for old age.

It is becoming more difficult to secure competent devotees to research in these lines in part because of the enticements of business and scientific careers under the auspices of industrial institutions. Thus it is that the economic condition of workers in this branch in the universities where they are most largely engaged, as well as of those engaged in independent investigations, is likely to be unsatisfactory. The technical education required for such pursuits varies so largely with the various disciplines that no definite statement can be made as to necessary requirements. There is less difficulty in obtaining instruments and materials for work than campetent men to use them.

The most active organizations in these phases of research in biology as related to medicine are the universities, the medical schools, the federal services, a few large industrial establishments and a few endowed organizations. Under these auspices, the work is carried on with varying degrees of efficiency, in some places with abundant resources, in others with very meager support. There is perhaps a sufficient number of organizations supporting such work, but nearly all need more endowment and more men.

Similar phases of work pursued in other lands are large contributors to the results aimed at in these phases of research, and are stimulating and helpful to us as is our work to them. My sources of information concerning the work both in this country and abroad are publications and personal acquaintance with a large number of the workers.

There are no more relations between workers in this special branch in this country and between them and similar workers abroad than exist in several phases of science, and these are maintained through publications and personal intercourse. Such relations, of course, might be extended and possibly improved, but it seems doubtful whether an international organization would at this time be useful.

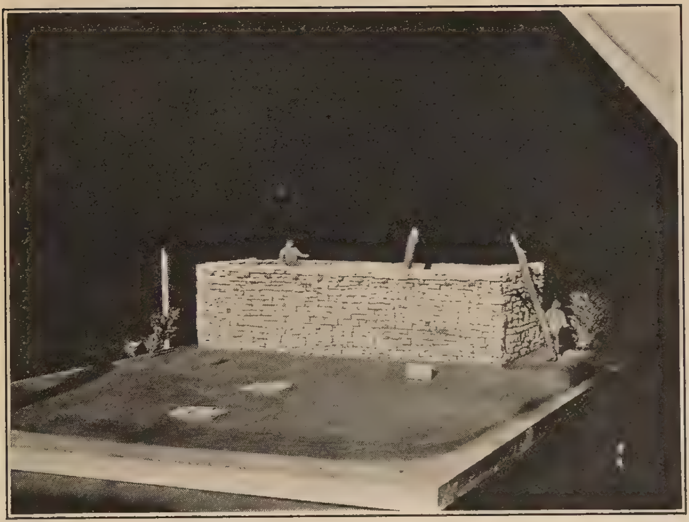
It is impossible to forecast very definitely what lines of work in these branches are likely to receive special attention in the immediate future, but the outlooks would seem to indicate a closer and closer affiliation of the physical and biological sciences with all the varied lines of pursuit which this involves.

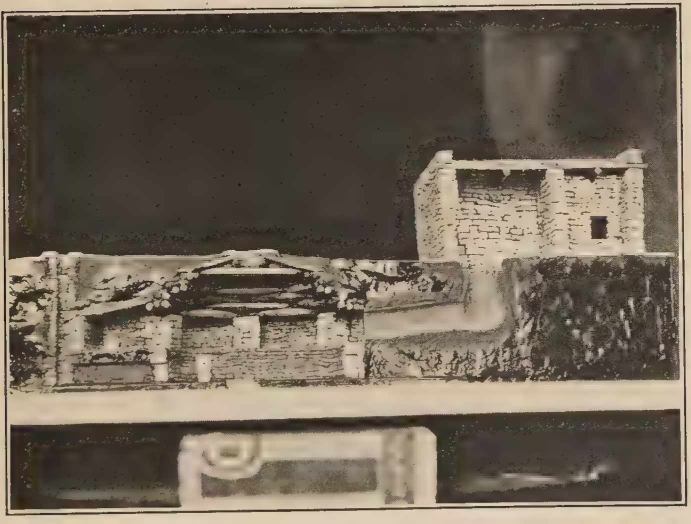
In his letter to Dr. Pritchett Dr. Prudden alludes to his use of the leisure brought by his retirement in further pursuit of the studies in American archæology, begun in summer vacations. It was interesting occupation for him to solve problems and verify theories that had been slowly crystallizing in his mind, and naturally lead to more articles for the *Anthropologist*. He found time to prepare another small but interesting exhibit of the cliff-man's way of life, which included a skilfully made model of the exterior and interior construction of his house, which Dr. Prudden had used to illustrate his article on the "Small House Ruins of the San Juan Water Shed," in 1918. It was given to the Museum of Natural History in New York. The letter of acknowledgment from P. E. Goddard, Curator of Ethnology, indicates the value of this small exhibit.

From Mr. Goddard to Dr. Prudden

December 21, 1917.

I cannot reconcile myself to our files being without a written expression of the appreciation with which your





Dr. Prudden's Models

of the Exterior and Interior Structures of Unit Type of
Cliff-Dweller House in American Museum of
Natural History, New York.

recent gift was received. I am, therefore, writing you with some fear that I may bore you thereby. During my connection with this department, we have, of course, received a great many gifts, but a great majority of them have been gifts of specimens, merely. The donors, in many cases, have not known at all what they have given us or the regions from which the articles came. Our appreciation, in your case, is directed particularly to the long years of conscientious research work on a definite problem. The objects you have placed in the Museum have associated with them publications of great value. The very quiet and unobtrusive way in which you have done your work has and will prevent full recognition being accorded you. In my own mind, I have not the least doubt but that this is precisely the result you expected and wished for. For that reason, I hesitated to address you.

A later estimate of the archæological value of this sideline in science comes from Dr. A. V. Kidder, of the Harvard Peabody Museum.[2]

By the recent death of Dr. Theophil Mitchell Prudden the Anthropological Association has lost one of its founders, and Southwestern archæology one of its foremost students. Although archæology was an avocation with Dr. Prudden, he brought to it the resources of a mind naturally adapted to and specially trained for scientific endeavor. For many years it was his custom to relax the strain of his important professional duties by trips to Colorado, Arizona, and Utah. Summer after summer he travelled by packtrain across the arid plateaus of the San Juan country, and it is doubtful if any other man ever so thoroughly explored that difficult region.

Dr. Prudden's journeys were more than mere vacations, for he always brought back maps of the intricate canyon systems, notes on the climate, and descriptions and photographs of the hundreds of ruined pueblos and cliff-houses that he encountered. Dr. Prudden, also, was far more than an observer and an amasser of data. His interest lay in the fundamental problems of culture-growth, and he at once saw in the Southwest a fertile field for morphological studies. He was the first to describe in print the early Basket Maker culture in an article in *Harper's Magazine* for June, 1897. This was followed in 1903 by "The Prehistoric Ruins of the San Juan Watershed" in the *Anthropologist*, a model report of reconnoissance, accompanied by a most invaluable map, but especially important in that it embodied the author's identification of the old "unit-type" of pueblo structure, and thus laid the foundation for all subsequent research on the developmental side of Southwestern civilization. The problems raised by the discovery of the "unit-type" led Dr. Prudden to excavate a number of these early villages and to publish "The Circular Kivas of Small Ruins in the San Juan Watershed," and "A Further Study of Small House Ruins" in the *Anthropologist* of 1914, and the "Memoirs" of 1918.

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[2] The *American Anthropologist,* N.S., 27, 1925, pp. 147-150.

Dr. Prudden's love for the San Juan was by no means confined to its scientific aspects; his *On the Great American Plateau* is the most vivid and delightfully sympathetic account of Southwestern life and desert travel that has yet appeared. His kindly nature endeared him to all those with whom he came in contact; to be known as a friend of Dr. Prudden's was the best credential one could offer at any trading-post on the Navajo reservation.

Of late years ill-health kept Dr. Prudden from his beloved San Juan, but his interest in the region, its people, and its ruins never flagged. He was a generous contributor to the funds of expeditions, he read with keen interest everything published on Southwestern archæology, and his advice and friendly criticism were of the greatest help to the younger men entering the field.

The following paragraphs from a letter written by Dr. Kidder in 1924 add emphasis to his last paragraph:

> As a very young man going into the Southwestern field, I wrote him asking his advice about outfitting and methods of travel; he at once replied most fully and cordially and invited me to come to see him in New York. He then gave us our first and, indeed, our only unsolicited contribution, and continued his financial support up to the year of his death. From that time on, I was always closely in touch with him, and his deep interest and his friendly advice were a great help and stimulus.
>
> I remember with the greatest pleasure my visits with him in his apartment overlooking the Park when, back from some trip in the San Juan, I would tell him about our work; and we would talk over the various packers and guides and Indian traders of whom he was so fond, and who were so fond of him.
>
> I have always thought that his was the ideal attitude of the older, mature type of student toward the enthusiastic but inexperienced beginner, and as I, too, have grown older, I have tried to pass on to the younger men something of the inspiration which he in so generous a measure gave to me.

Barred from his beloved trips to the Southwest by the lessened strength of later years, he found healing and refreshment in three localities in the eastern part of the country. These were Jackson, New Hampshire; Bethel, Maine, where under the skilful guidance of Dr. J. G. Gehring, who became one of his best friends, he found the way back to a comfortable degree of health after his first serious breakdown; and Camp McDougal in New Brunswick, a place reached only by a long journey from Calais, Maine, where the last fifteen miles were covered by buckboard from a little settlement boasting the attractive title of "Bonny River." Here he had a simple hunting lodge built, and often went for two or three weeks with such members of his family or friends as enjoyed fishing and hunting better than he did. He usually busied himself in clearing up the scrub around the camp, or sitting with his pipe on the little porch and listening to the tales of guides or friends. It was a treat to be one of his guests there, for he had a way of assuming expenses for guides and travelling with a free-handed hospitality such as we usually associate only with the "unco rich." The place, on the edge of a vast wilderness overlooking a lake, was beautiful for situation and teeming with wild life. His first visits both to Bethel, Maine, and Camp McDougal were made with the companionship of Dr. A. B. Wadsworth. No son could have given him more thoughtful consideration than Dr. Wadsworth during his first years of search for health in various directions, and the intimacy of this intercourse continued through life. In reference to these journeys, Dr. Wadsworth says he "marvelled at his patience, fortitude, and keen intellectual acumen even in the most trying situations."

His apartment and his summers in the West were, in reality, the only personal indulgences of his quiet life, but he was free and even lavish with money for his work or for his friends, although always with so strong an aversion to having his left hand acknowledge what his right hand did that it was difficult to make him even receive thanks. In 1901, he paid for the printing of a private edition of a history of *Peter Prudden and Some of his Descendants* which he had inspired his sister to prepare from data left by his brother Henry, but was unwilling to have his part in it mentioned to the branch of the family to whom it was sent.

In 1904, he, with his brother Theodore, placed at the disposal of his sister a sum of money sufficient for a summer cottage on the slopes of Thorn Mountain in Jackson, New Hampshire. He never saw it until some five years after it was built, and there was no thought in either his mind or hers that in the years after his western trips became impossible it would become an attractive summering-place for him, and that he would be the center of its happy life for many years. Its chief glory is the view of thirty miles of mountain ranges capped by Mount Washington, and he never tired of the outdoor life on its broad verandas. His presence was an additional lure to his brother Theodore and his family for successive seasons both before and after Theodore's death in 1915. He purchased an adjoining cottage for the protection of his sister's place, which he freely offered to various friends or gave for a nominal rent, and which he particularly enjoyed having used by groups of young people who could not otherwise have such vacation opportunities.

He was always planning conveniences and luxuries and improvements for the place; such as studying out an ingenious engineering scheme to increase the water-supply from some small springs, or amateur golf links, or a temporary garage, a new driveway, more trees and vines.

The weeks he spent there were the red-letter part of the season. His keen observation of flowers and rocks made a saunter in the fields with him alive with interest. Sometimes he specialized on the ways of ants, and again there was a nightly flash-light inspection of the spiders, whose wonderful webs had passed unnoticed before. An ingenious placement of a small telescope made the craters of the moon familiar sights, and the pedagogic impulse led him to keep on hand an arrangement of balls and lights to illustrate the movements of earth and sun and moon for those who could not "pass" on a clear explanation. His exquisite exhibition of the circulatory system of the frog through what he called his "old microscope" was called for many times by those who had or had not seen it. Many guests testify to an added enjoyment of the beautiful spot through seeing, as one says, "his scientific spirit, his wide general cultivation, his wit and good fellowship with his gay young nieces."

Another visitor recalls the evenings around the blazing fire whose logs had usually been selected and brought in by "Himself," and which no one would venture to lay and light in the presence of the man so skilled in camp fires. His "long spare figure" would be stretched out in the wicker chair that had been especially bought for his comfort and for which the room afforded ample space, as he listened to the reading of the papers, sometimes smoking and sometimes "swinging one foot gently but persistently the while." Occasionally he would throw in keen comments. "His political opinions were strong and definite" when expressed at all. Once he rose and turned the picture of a prominent public servant of whom he ardently disapproved upside down in the place where some admirer had pinned it on the wall, and kept it so until jocosely rallied for prejudice, when he finally permitted it to regain its feet.

If a novel finished the evening reading, he often threw in a semi-humorous criticism of a character or plot, but was more frequently a listener than a free participant in general conversation. From a friend who was often a member of the Jackson household, we learn how his reserved habit impressed those who had not, like his family, become accustomed to it.

"To intimate friends who knew what rich and varied experiences his life had covered both in Europe and in America, where they sometimes even skirted tragedy, it was a constant source of regret that he could so seldom—practically never—be induced to tell the story of those days. Natural reticence and modesty always seemed on guard." One friend who was commenting on this fact recalled the almost invariable and amusing formula which passed between them when meeting after the long summer vacation. "Have you had a good summer, and where have you been?" she would ask Dr. Prudden on his return from his long western trips. "Oh, fine!" he would reply, "been riding hundreds of miles in the wild west, tell you about that another time. But where have *you* been?" and skilfully leading the inquiries into the enemy's country, the story of the cliff-dwellers and their ilk was always indefinitely postponed.

"It is recalled that he once forgot himself, on an evening when all but two of the family were absent, the others having gone to the distant station to meet some guests. For some reason there was an unusual delay in their arrival, and the time passed slowly. Whether it was the silence or the lure of the flaming logs that tempted him to speak—or perhaps his natural instinct to meet an emergency—he began to talk quietly of some western experience years back, full of incident, natural beauty, and Indians. The story was one of engrossing interest, and the little audience realized that it was having a great treat. But the sound of arriving wheels broke the spell, and, presto! the fascinating raconteur instantly became the alert host whose only concern was the comfortable housing of his guests, and the travel tale went to join its comrades in the Great Unknown."

This presentation is perfectly fair, but the fact remains that with his few words and his real gift as a listener, he was easily and naturally the central element in any group that gathered around the veranda dinner table. When incidents did not concern himself or his work or travels, he told them freely and with a charm and zest and humor that were provocative of conversation in others. If accused of holding back interesting things about himself, he would doubtless have said, "They wouldn't care for that." Or if asked why he didn't say something on some occasion, the reply would be, "I should, if I had had anything to say." Or possibly, "There was such a wash of words around that I wouldn't add to it."

One summer he made stone steps of cement and small stones which were much admired, but when he began to work with a mysterious-looking white substance, which filled pans and moulds, feminine curiosity was whetted, and he made an offer of five dollars to the lady who could guess what he was doing. No one won the money, and he never told, but those who saw the clever model he made the following winter of the home of the cliff-dweller (the one that is now in the Museum of Natural History in New York) found out that he was experimenting with a kind of "staff" which he could cut with a penknife into the simulated adobe bricks with which he reconstructed the ancient dwelling of the pre-historic denizen of the plateau country. The khaki tent which he had so much enjoyed at the Grand Canyon of the Colorado was sent on by his friends of the Grand View Hotel and put up in the Treetops woods. He usually slept there, and it was often his retreat for writing or rest, particularly when it chanced that there was an overwhelmingly feminine atmosphere at the cottage.

Aside from the literary work already mentioned in connection with his interest in the Rockefeller Institute and in archæology, there was a paper prepared in vigorous defense of Dr. Doty's administration of the New York quarantine in 1912. A paper read before the Practitioner's Society in New York, in 1909, on "Dr. Gehring's Work at Bethel, Maine," was published as a small pamphlet. He used his intimate knowledge of the success of Dr. Gehring's methods to lay stress on the importance of the tactful and skilful use of psycho-therapeutic influences in addition to medical supervision and treatment on the part of practitioners.

Dr. Prudden was so many times called upon to prepare memorial minutes and obituary notices that to gather them all together would make a book in itself. He was concise but happy in his choice of words to show the high lights of character. Whether the subject were one of the young men whose enthusiasm he had himself kindled and whose deaths were a personal grief as well as a great loss to science, like the genial Dr. Hodenpyl, so long his able and skilful coadjutor in laboratory and classroom, whose whimsical humor, ready helpfulness, and unselfish devotion were so marked, and Dr. Philip Hanson Hiss, who became an instructor under him in 1900-1901 and in 1904-1905 was adjunct professor of bacteriology, and full professor in 1906, and Dr. Edward Leaming, whose unostentatious service through his rare ability in photography made his work of inestimable value; or, whether it was a beloved friend like Dr. Biggs with whom he had stood shoulder to shoulder in many an effort for public health and for whom he was called to write four different appreciations during the last winter of his life for four different organizations of which they were both members, or a minute, not published till after his death, in regard to Dr. Emmett Holt; they were all restrained but just and appreciative tributes.

He never reached a time of lessened intellectual power. Physical disabilities often curtailed his activities, but whenever he undertook a task, the same clear thinking, sound reasoning, and apt phrasing were in evidence. No writing he ever did excelled in felicity and facility some of the articles of the last five years.

There were three long and trying hospital experiences and several occasions when for months he was obliged simply to mark time in order to recover sufficient nervous energy for his usual interests. There was much of the stoic in his attitude toward illness, just as there had been in boyhood. His philosophy of life was so essentially sane that he accepted necessary readjustments with courage and patience. Only those who loved him and knew him well could guess what inactivity meant to one so keen to share in the growing achievements of science.

He came to know many of his old students as practitioners when the various maladies that afflicted him at one time and another called for specialists. He appreciated highly the uniform consideration and kindly devotion of doctors who considered it a privilege to help in any way the man whose work they universally valued. He often found great difficulty in maintaining his fixed purpose to be independent of that courteous custom of doctors to serve each other without pay. Not being a practicing physician, he could never bring himself to accept such consideration without a protest, which he was often strong enough in will to maintain.

The quiet study above the roar of 59th Street was a frequent meeting place of the Board of Scientific Directors of the Rockefeller Institute. It was a veritable "house by the side of the road" to those who came to this reserved but warm-hearted "friend to man" for advice, counsel, sympathy, encouragement, and for criticism of scientific paper or literary effort. There was always a detachment from himself that gave a sense of leisure for balanced judgment upon the problems of his friends. His keenest enjoyment was in the calls of old students. He would have found it a trial to move from that apartment lest the "boys" would not so readily have dropped in to tell him of their interests, achievements, opportunities, and plans, or the new angles that revealed some brighter light in medical outlooks. Dr. Haven Emerson says, "In the later years there were delightful half-hours in his sitting-room of an afternoon, viewing the sweep of park and the distant Palisades, and hearing the story of the Pueblos, to bring back a glint to his far-ranging eye, so different from the expression of the microscope worker." He enjoyed, too, the young people who were drawn to the apartment after one of his nieces became a member of the family, viewing with a humorous but sympathetic interest their readiness to offer panaceas for all the troubles of this unquiet world. Often one or another would slip away from a group in Elinor's sitting-room for a chat with "Uncle Mitchell" in his library, or for a word of counsel about his or her future plans.

Neither solitaire nor any other card-playing was ever a diversion to him. He did not begin young enough to cultivate "fads" for amusement during the hours of half-invalidism that lay between serious illnesses in his last three years. When he was well enough to listen to reading, that helped him through many evenings when his eyes did not permit him to read to himself. He had little enjoyment in "problem" novels, but clever plots, stirring adventures, and sprightly dialogue usually held his attention.

About the middle of both of the last two summers, he had to leave Jackson suddenly. The first time, a long season of sleeplessness had brought on a frazzle of nerves, which finally took some months under the wise régime of Stockbridge to overcome by judicious rest, occupation, and "a serene habit of mind."

The second time, his heart, which had for ten years depended on the stimulus of digitalis, had developed an acute and dangerous condition, thought to be due to the effect of altitude while still weak from a surgical experience in the spring. After two months of skilful treatment and watchful care at the Deaconess Hospital in Boston, he was able to go back to New York for a comfortable winter in which he was in more or less touch with his major interests. Except that he rode instead of walking if he wished to go farther than around the block, and that a slow step was substituted for an active stride, there was little to indicate feebleness. His mental efficiency was unimpaired; he kept to himself his natural dislike of such a limited type of existence as was allowed him, and preserved a front of equanimity and courage to his family and friends. He had been quietly setting his house in order for some years, but the last conversation with his sister was about plans for their future arrangements for an old age together, when, as seemed likely, he should be forced by changes to leave his apartment, and he entered with zest into a wording of an advertisement of the Jackson property, and the consideration of a summer plan that would make a trial of the Massachusetts South Shore a substitute.

The end came as he would have wished it. His usual trip over to the Institute in the morning, a rest and a little writing in the afternoon, a pleasant evening with his niece reading aloud from a diverting book, and in the early morning his eager spirit had entered a new realm of research.

RELATIONS WITH YOUNG PEOPLE

Philip Bissell—Letters to Mason Children—Jackson Life with Nieces and Nephew—Letters.

BACK in 1873, the man who was to evade social affairs so often records in his journal the wish that he "could have talked with the children outside, instead of the young women" at a party. This preference may have been simply shyness then, and life did not bring him many natural opportunities for contacts with young people below the age of the average medical student, but when it did, he readily adapted himself to them. Dr. Bissell kindly furnishes one illustration of this adaptation.

Those friends of Dr. Prudden who knew him only as a scientist or as a busy professor would perhaps hardly picture him in his relations with young people, or guess how interesting he could make himself even to little children. Such a realization of hidden qualities came to the writer when privileged to visit the Prudden family in the early eighties at their summer home on an island off the Connecticut shore, where the three brothers were then on vacation and where a little lad of four years was an unusual guest in that grown-up household.

It was interesting to note how the little boy, with the unerring instinct of childhood, at once assumed a confidential attitude toward the dignified and rather silent man. The day after his arrival he was seen trotting over the rough stones alongside the doctor, whose tall figure drolly exaggerated the child's smallness, his hand slipped confidingly into that of his companion, plying him with childish questions about the new environment, questions to which he was evidently receiving serious and satisfactory answers.

Without ever seeming to make him an object of special attention, Dr. Prudden occasionally suggested amusements for the little guest. Neither then nor at any subsequent time did Dr. Prudden condescend to Philip. They met on a mutual basis of perfect simplicity of nature, which the keen instinct of the doctor recognized in the child as quickly as the latter had sensed it in his superior. In that early visit Dr. Prudden made a never-to-be-forgotten impression upon the little boy, who always called him "*the* Doctor" from that time on and when, some two years later, through vicissitudes of city movings, Philip found himself living "just across the way" from his new friend, he begged to be allowed to run over in the evening for a few minutes' visit. He returned after his first call with eyes dilated with excitement and pleasure to tell what a wonderful "tick" the Doctor had shown him. He had stuck little pieces of white paper on his fingers, and these would appear or disappear according as he called out, "Fly away, Jack! Fly away, Jill! Come back, Jack! Come back, Jill!" This picture of the busy man of science dropping his evening reading or work to amuse a little child with simple sleight-of-hand, and doing it with such spirit as to give the boy confidence in his welcome, was only one of many similar episodes while the propinquity lasted.

At Christmas time Dr. Prudden took the trouble to leave a Christmas gift for the child in the safe-keeping of the maid, with strict injunctions that the secret should not be disclosed before the Great Day; and on a second Christmas his busy friend remembered him with a Waterbury watch—a wonderful treasure.

The confidence and affection thus aroused became the basis of a mature friendship between the two, as the school-boy emerged into a medical student and often sought the counsel of his superior in his problems and had the privilege of finding himself welcome to an occasional dinner where the talk ranged over various subjects, which Dr. Prudden always made vitally interesting.

The letter following was evidently called out by some question as to the fruitful use of the long summer vacation.

From Doctor Prudden to Philip Bissell

May 25, 1899.

I found the skulls grinning a welcome when I came in the other night, and they seemed to be just about as comfortable without hinges as with, so if they don't mind, why should I?

I do not know what you are to be about this summer nor whether you are purposing to make it a half study, half play, half work vacation. My feeling is that for men who are worked as hard as ours are for a considerable part of the year, it is the wiser thing for almost everybody to devote the vacation to legitimate vacation business and leave professional books alone. I think that at the end of the year one is apt to have more knowledge and likely to have better health. So far as pathology is concerned, I do not think that you will gain anything by bothering with the books. If you will come into my class, with an hour of outdoor country air in your record for every hour which you might have put into the books, you will, I think, have an easier time of it; I know that I shall, and I reckon that science, on the whole, will be the gainer.

When temporary ill-health made a year's absence from college work necessary, Dr. Prudden invited Bissell to join him in one of his unique western trips through unvisited canyons and into unknown wilds. Bissell had been in Colorado with friends, and at the time of the following letter was working on the Wetherill ranch in Mancos, where he was to meet Dr. Prudden.

From Doctor Prudden to Philip Bissell

May 8, 1900.

I quite envy you in the simple though arduous duty of bread-winning in the country as I look at the month of complexities which I have to wade through before about June 10, when I am hoping to start westward, getting to Mancos, I fancy, about the middle of June, not the first, as Clayton appears to have intimated to you.

Our examinations are on this week, and the medical student with the worried look is much in evidence in this quarter of the town. Beyond this, the sun rises and sets as usual in this little world of medicine.

I wish that you would find out from some of the people —perhaps Mr. Kelly knows—about an article which I think was published a couple of years or so ago containing the history of the Montezuma Valley. See if you can get trace of it, so that I can get it when I come out. It may have been published in a Dolores paper.

I expect to find you horny-handed and brown, an expert with the lassoo, capable of roaring a mule into subordination, and discreet in the culinary art.

I slip in a circular, which has been lying on my table for some time, which may interest you.

Please frame a message of regards from me to the ladies of the household.

On such a trip it might easily have happened that a young man would have felt some restraint in the presence of one so much his superior in age and attainments, especially when that superior was of the markedly reserved and dignified type of the Professor of Pathology, but such was the generosity and tact of the host and such the essential simplicity and straightforwardness of both men, that the trip was made a delight and privilege from start to finish.

It was inevitable that such a season of shared pleasures and hardships should have still further added to the congenial contacts between the two friends. At the informal dinners to which Dr. Prudden invited Bissell during the following winter, their mutual reminiscences were swapped with zest. The student from that time on was always dubbed "the Judge" through some whimsical notion of the doctor's, possibly because of incidents or mannerisms noted during their summer of companionship. It can easily be imagined what a world of rare interest Dr. Prudden had opened to the young man through this summer's experience and opportunities.

It may not be out of place, as illustrating Dr. Prudden's readiness to forward the interests of a friend and as one of the by-products of this trip, to quote from a letter he wrote to the superintendent of one of the "Big Four" hospitals in New York, in which the young doctor wished to obtain an interneship. After speaking highly of the candidate's general background and character, he added: "I have known him not only socially in his family relationships and as a student but under the severe tests of a summer of hardship on an exploring expedition in the far West, when he met the trials of the way with such energy, cheerfulness, and resource as led me to a very high estimate of his promise in the vicissitudes of a physician's career. He is a man of whom I would expect sustained and intelligent service in any capacity, and for whose future in medicine I have the highest anticipation."

Only the premature death of his young friend put an end to Dr. Prudden's kindnesses, which were always proffered with characteristic tact.

THE tall distinguished-looking man became well known in toy departments when he selected Christmas gifts. Among others whom he remembered there was a group of children, nieces of the Wetherills, whose home was in a remote Colorado town. If they are living now, they will pardon the use of their letters to illustrate the camaraderie of his intercourse with them. He had evidently endeavored to set little Deborah in the path of natural history study with his equipment of "cork and pins."

From Deborah Mason to Dr. Prudden

Creede, Colorado, November 4, 1901.

I received the cork and pins and pictures you sent me and I feel very grateful to you for them, when bug time comes I will have all the pins and cork full of bugs and butterflys as there are so many of them.

That pretty pin you sent me by Uncle Clayton, I like it very much and the children call me big bug every time I put it on.

We have moved away from the fish ranch and now we live about two miles from Creede, we can look across the river and up a small hill then up a mountain covered with trees and snow then look on the other side you will see a mountain covered with prospecting holes and away up in the mountain is a mining camp called Bachelor.

We are having lovely weather now days.

I would like to hear from you again.

From Dr. Prudden to Deborah Mason

December 14, 1901.

I am sending off a small box by express today, directed to Creede, which contains a few Christmas knick-knacks for yourself and the other girls.

I thought that perhaps Alice might like the bracelet, which will fit anybody's wrist by the use of the padlock. The little typewriting machine is for you. I think that you will easily find out how to use it by the directions. You will see that the paper is put in between the rollers like the piece now in it. The letters print by pressing the little rubber knob just over the notch in front. When you press down hard on this it prints the letter, and when you raise your finger, the paper jumps a little sideways for the next letter. When you want to make the paper move without printing, you press one of the knobs a little to the right hand of the printing knob. When you have reached the end of the line, you shove the whole wheel back to the left, and to turn the paper take hold of one knob at either end and turn it one click.

The little sewing-machine is for Marion; the paintbox for Olive; and the table croquet for Luella, with some little scattered things for everybody.

From Alice Mason to Dr. Prudden

Amethyst, Colorado, December 31, 1901.

The box of Christmas presents arrived safely. Debby was not here to distribute them, she is over to Mancos with Grandma or she would have written also.

I think good old Santa Claus must have whispered in your ear, to know just what we wanted, each one of us, send you our many thanks.

Come out next summer and we will try to show you how much we appreciate your kindness.

Papa and mamma send you their regards.

Wish you a Happy New Year.

From Deborah Mason to Dr. Prudden

Amythyst, Colorado, December 2, 1902.

I have been intending to write to you for a long time, but Mamma said wate untill I get down here and write to you on my typewriter.

Grandma and I are living near Creede and Mamma and Papa are living 20 miles from here at the old Texas Club house. We are having very cold wether now and the river is frozen hard enough to skate on. I am studying hard now and I am all most through my insect life but there was not much about insects in it. It was more about birds and animals. I am very sorry I did not get more bugs than I did last summer.

I thank you every so much for my little typewriter. It has been such a help to Grandma and I and we like it so much. We were thinking about one that would write both large and small letters and Grandma thought you would select one for us. If so will you please write and tell us the price and we will send the money.

We are keeping one horse so I can go to town and get the mail for Grandma. This is not a very long letter but I will do better next time.

Please answer soon.

P.S. I wish I were one of your students.

From Dr. Prudden to Deborah Mason

December 20, 1902.

I was glad to hear from you and it seems to me that you are very skilful as a type-writer. It does look a little odd to see a letter all in capitals, and so I have had them put into a box for you, as a sort of Christmas present, a double type machine of the same kind, which I am glad to send with my Christmas greeting. I have had this box sent by Wells Fargo Express, prepaid, to your father at Creede. I leave it to you to get it or ask him to do so. It contains a variety of other little things for Christmas remembrances for your sisters.

I should think it would be pretty good fun skating and riding about in that cold weather. Much better, I am sure, than being in the noisy city. I have not heard a word from anybody out your way since I left Colorado in August, not even from Mr. Hyde.

Please give my Christmas greetings to everybody, and let me hear from you by and by in a letter of two sizes.

From Deborah Mason to Dr. Prudden

Amethyst, Colorado, January 2, 1903.

The box came and every thing inside in good shape. I opened it and took out the typewriter and the puzzles with my name on them and Grandma sent the rest up to the children. My typewriter is just what I wanted and I thank you very much. I think it will be a great help to me in many ways.

I am going to stay with my studys more than I ever have, Grandma thinks I ought to know more than I do and I think so to and I do not see any thing for me to do only to go to work and apply my self. I would like for you to see when you come to Colorado again that the money you spent for me has not been wasted.

We have lots of snow and cold wether and fine sleighing.

I hope you will come back next summer and see us, we like to have you here with us.

I will close for this time. Please answer soon.

From Alice Mason to Dr. Prudden

San Juan, Colorado, January 12, 1903.

We received the things some time ago, but did not know where they came from, untill last night. We all thank you for your kindness, we don't know how to repay you. "Tick Tack" is a fine clock and keeps good time. We have a magic lantern show quite often, and think it is lots of fun, it takes us a long time to work out the puzzles, but we succeed at last. I think my things are just lovely especially the blue scarf.

His brother Theodore's removal from Chicago to the vicinity of Boston, in 1894, first brought him in touch with the family of five children whose life came so close to him in later years. He never missed a Christmas with them in the West Newton parsonage or at their later home in Brookline, and his wonderful presents were always carefully chosen and usually things that were beyond their wildest dreams. His engagements made his visits short, and they seldom saw him at any other time so that he seemed to them something between a fairy godmother and a benevolent Christmas spirit, and they never dreamed that he was unused to children. As they grew older, delightful visits to New York began to occur in which the plans of their host showed an extraordinary sense of what they would like most to do and with his coming to Jackson, the chance of summer companionship was eagerly sought by them and their friends to whom he soon became "Uncle Mitchell."

His penchant for giving names of his own, like calling the girl from Worcester, "Worsteria," and one from Egypt, "Cleopatra," included the nieces, and accounts for the letters addressed to Elinor, his oldest niece, as "Sam." She had undertaken social work with an enthusiasm toward which he often assumed a semi-derisive attitude, and her interest in the problems of the so-called working classes, of whom Samuel Gompers was the exponent, led to that nickname in the beginning, although he later scorned that origin, and declared that "Sam" was only an abbreviation for "Good Samaritan." Another niece, Lilian, became the "Duchess" because the name suited her figure and carriage, and Edith, "Raoul al Hashid Bey" ("Rool" for short). The origin is a little obscure, but probably came from a kind of Turkish bloomers worn one summer. "Angela" was adopted in recognition of the artistic tastes of Elizabeth.

There was, now and then, a chance to know his method of awakening the reasoning faculty in pupils, when, after one had been floundering around to reply to some keen question, one was brought up with the remark, "*What* do you mean? You haven't *said* anything yet." And many times the idea which we have understood was a common marginal note on papers returned to students, "Never generalize from one guinea pig," was put into terse injunctions in language easily understood by the laity.

When Elinor went abroad as a member of the "Vassar Unit" for rehabilitation work in devastated France, he gave her $500, as an extra, which he called her "Great Adventure" fund. His gifts were usually under cover of some whimsical idea, and were as unexpected and as various as the reasons that he would devise for them.

Two of the nieces, Lilian and Edith, eager to have a bungalow of their own on the Jackson domain, enlisted their uncle's coöperation in the enterprise that drew them and their friends to Jackson with great enthusiasm for several summers. They dug, they levelled the ground, made the plans, and did all the boarding and shingling and inside finishing themselves, with advice from their uncle. He often sat nearby smoking, and perhaps they did not know they were making mistakes until they saw a smile or a shrug of the shoulders from their quiet mentor. He insisted upon their making their own calculations for the building materials, built a stone chimney for them, rented them the land, and took a regularly executed mortgage on the property for money he advanced. They named the little bungalow "Toad Hall," suggested by Kenneth Graham's "Wind in the Willows." They purchased a piano for it, and it has remained a significant addition to the Jackson life.

Singing, recitations, and other stunts enlivened many evenings there, and "Uncle Mitchell" frequently contributed from his apparently inexhaustible store of poetry, committed to memory during odd hours. If the spirit of fun demanded a fancy-dress occasion, "Uncle Mitchell" usually had his Indian costume stowed away in his trunk, and could play the part as long as desired with no word but "how," and characteristic grunts.

The following are taken from a small book of letters to his nieces and nephew, which Elinor had typed as a Christmas present for the family the first year after the loss of the beloved uncle.

From correspondence with Lilian and Edith re Toad Hall

New York, April 17, 1914.

Dear Madams:

If you have satisfied yourselves that these artificial shingles will not curl or soften in the sun and do not smell (by which I do not mean that they may themselves appreciate an odor, but incite the olfactory sense in the owners or guests of the alleged and still potential T.H.), I should think it would be a pleasant variation from the usual to use them . . . Br'er Dearborn said that one could get lumber "cheaper 'n better some'rs else" than at the little gent's in Conway. He said the Berlin Lumber Mills at Portland, Me. were good folks. You might get what you want into form and get a quotation from them. Your estimable, amiable, and reverend sire could doubtless guide you over such pitfalls of style as might beset the unwary novice (assuming such to be the case) in a technical business communication.

With renewed assurance of my appreciation of your esteemed and honorable patronage, I am ladies

your humble
and ob'd't
s'v't
T M P

New York, May 10, 1914.

Dear Ladies:

I do not suppose it is "absolutely essential" for you to be on hand when your chimney is laid, but if you are not, you cannot control its exact form and character . . . Let me have any other directions you may be able to formulate about the chimney . . . What the charge will be for this supervisory service I cannot now say, but it will be as moderate as the necessities of my profession and family require. Probably the charge will be by the hour. May I remind you that it is customary to speak of building material not as "wood" but as lumber.

Site of Toad Hall,
May 24, 1914.

Dear Ladies,

There are but few toads out yet. Otherwise, everything seems all right at the Hall.

If it should be necessary to have the frame of the shack thrown together in order to fit the chimney, it would be necessary to know just where the windows and door and the partitions between the saloons are all to be placed.

I have no such data for the sides or the boudoir. I pray that you let no grass grow before you have the data in my hands, not even the fraction of a spear.

Your Aunt Lillian does not send greetings. Whether she would or not if here at the moment, will never be known unless you find out.

HUSTLE.

New York
October 21, 1914.

My dear Duchess,

I have at last waded through my sea of correspondence until I have landed on your missive of the 10th inst.

I enclose receipt of current account marked Exhibit No. 1.

You have not included in this the end of a hemlock plank, which I purchased of your partner at private sale for twelve (12) cents cash. I enclose this sum in United States securities available at sight. See Exhibit No. 2.

During some of the hours of leisure which supervened on the fading away of the F'b't'g's[1] from the mounting, I clim a tree near your lot and at a spot considerably down the hill from Todehawl whence one could get a frontal aspect of the shack. As this view has not been accomplished before, I made several exposures, all a little down hill as was inevitable. As the tree swayed in the wind, some of the views went a bit askew as the operator strove against precipitation on the sward—happily, with success.

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[1] An abbreviation for "Flibberty-gibbet," a favorite characterization of persons found guilty of inattention or inadvertence.

These prints and negatives I am enclosing, as I have no further use for them. See Exhibit No. 3.

With expression of high appreciation, esteem, and regard for yourself and family, and especially the stray F'b't, etc., I am

Yours OB'E'T'L'Y

[With the mortgage.]

New York, May 3, 1915.

The Misses Lilian and Edith Prudden,
Brookline, Mass.

Dear Ladies:

After going to my strong box the other day, you can imagine my surprise and consternation at discovering that some vandal hand or some insect or perhaps some rodent had ravaged the signatures from your mortgage so that the document has become worthless.

I am at a loss to account for this, which looks like rank destructiveness. Why an insect or a rodent should have selected just this part of the document, leaving the rest intact, is not clear except on the hypothesis that charm may flow from a pen-tip.

In any case the damage seems to be irretrievable, and I must acquiese as fusslessly as I can. The oriental traditions of one of you will realize that the line of least resistance for me is to say Kismet.

So I have cancelled the note and send the same with the ruined mortgage to you with my resigned compliments.

It was his custom to add to the Christmas fun by doggerel verse to accompany gifts. Extra furnishings for Toad Hall gave him unusual scope for this amusement. He greatly slandered the amateur carpenters by the insinuation that they had been seen sawing old boards without discovering nails hidden therein. The following was with the gift of a saw.

OUTSIDE

For the proprietors of Tode Hawl from a former victim.

INSIDE

A SORT OF A SAUCE SAW ABOUT SAWS AND SEESAWS

When I saw that you saw that I saw you saw nails with my saw, then I saw that if you saw that nails that you'd saw, you'd saw with your saw and not with my saw, you'd saw less nails with your saw than you'd saw with my saw. So this saw is now you see your saw and that makes it a seesaw.

[With a collapsible bucket.]

OUTSIDE

For Ede and Lil Of Jackson Hill
From one who will Admire them still.

INSIDE

When Ede and Lil went down the hill
To fetch a pail of water,
They'd groan and puff and like enough
Say things they hadn't oughter.
The pail was old and banged and grey;
'T was used for forty things a day;

For mopping now, for slopping then,
For toting dirt or mortar when
They'd plant a fern or build a wall;
Or when they thought there'd be a call
'T would lug the stuff for soup or tea,
Ablutions for the company.
I've seen it filled with kindling wood,
I've seen, as half concealed it stood
Behind the door in corner dim,
A pair of shoes peep o'er the rim.
A heavy thing, quite cheap at best,
Pray, Ladies, why not let it rest.
In short, why not brace up and chuck it
And use this lighter dainty bucket.

[For a picnic on Elizabeth's twentieth birthday.]

There was a young woman named Lib
Who would chatter, exclaim, and eke fib,
But her sisters, I trow,
Had shown her just how,
For they set her examples ad lib.

She could dance, sing, and draw,
She could sass her papaw,
She had graces and charm quite a plenty.
She's been slow growing up
But we'll tilt her a cup,
For today she is just turning twenty.

160 West Fifty-ninth Street,
New York, October 5, 1916.

My dear Angela:

An eccentric old friend of mine told me when I got back to town that he had an excess of income from some flourishing war stocks and had amused himself by establishing a series of fellowships for worthy young parties, and asked me if I knew any one who seemed to answer the requirements of the Foundation. So when you immigrated, I told him about your plans and he was at once caught by the idea that you would be an appropriate candidate, and said that he should at once bring the matter to the attention of his Board of Trustees.

Yesterday I received notice that one of the fellowships had been awarded to you, and he asked me as a favor to him to turn over the annual stipend, which is herewith enclosed.

The Foundation is called "The Fun and Frills Fellowship," and the recipients are only required to defray the cost of unnecessities only, in the form of such fun and frills as seem to them attractive, and no report is required.

So if you can see your way clear to gratify the foible of the old duffer, you will confer a favor upon a worthy if whimsical gent.

Yours a'f'c't'y

From Dr. Prudden to his nephew, Theodore Mitchell Prudden, who had graduated from Yale in 1913

160 West Fifty-ninth Street,
New York, November 9, 1914.

Dear Man:

I shall count on your coming to town for Thanksgiving. Let me know when you are to arrive early enough to get the calf butchered. I imagine that your aunt Lillian and I hope Elizabeth will keep the tradition and be with us.

Your prophetic soul saw with the precision of an arrow's flight that I should find your alluring invitation to freeze in a jaunt about the country at this season in the gasoline caboose, measurably impracticable. When the balmy Spring shows her smiling face, try me and see with what alacrity I shall, if thawed out, respond.

Jackson, New Hampshire,
July 29, 1915.

Mr. Prudden,
Dear Sir:

If it comes handy on your way up here, I wish you would pick up a small cheap call bell, workable with a dry battery and about 150 yards of wire which can be used to connect this house with the domicile of the Todehawlers so that they may be summoned by signals to dinner or other performance without the present necessity of yelling across the air to the scandal of the neighbors and the community. Get the whole outfit, battery, bell, and wire, and decide what your professional fee will be for the installation of the plant should you care to let your mind down easy to the frivolities of existence during the too brief respite from life's bitter toil.

February 20, 1916.

My dear Laborer;

I am only wondering, in reading the interesting account of your wanderings, whether you wore your plug hat or your overalls or both to Greenfield, Mass. It must have been interesting in either case to both you and your hosts.

Your problem, "what becomes of the energy lost when a block of wood is burned ten feet above the floor, as compared with a similar block which is burned on the floor," has occupied more or less of my waking hours of late, since so far as I know it has never been posed to me before.

I come to the conclusion that in the first case a part of the so-called "lost force" is expended in inciting the folks on the scene to hustle about and open the windows and let the wind blow the heat and smoke out. In the second case, the so-called "lost force" is in part used; first, to release the force requisite to call out the fire department and the police; second, the activities of these respectively, in a measure commensurate with their acquired capacities, which if not successful will release the probability that, third and fourth, the whole darn shebang will burn up and down, one after the other, which finally would set free the potentialities of debate, discord, and damages in the courts when the proprietors sued the insurance companies for their damages. This of course assumes that there was an insurance policy. If such were not the case, perhaps even more energy would be released by the owners in cussing themselves because it was not the case.

This is the only solution which occurs to me, and in this I leave out for convenience the consideration of the heating of earth's circumambient space, which would occur under either hypothesis.

Of course I have not set my heart on this as the one and only genuine solution of the problem, and shall not feel bitter if shown to be mistaken. But it does seem to me to be a basic, concrete, definite, expressive formula, genuinely tenable as a tentative attempt to try to translate the true though tragic postulate of yourself and your fellow-devotees to science.

I have a new musical instrument to show you when next you wander hither.

From Dr. Prudden to Elinor, who, after some months in the devastated area of France, used "the Great Adventure Fund" for a trip to Italy, after which she worked for several years in Czechoslovakia.

December 14, 1919.

My dear Sam:

That was sure a beautiful letter which you vouchsafed to me the other day and I was tickled to know that the Great Adventure was working. I was interested in the fine pictures, which gave a more vivid notion of the country than any yet acquired. I imagine that by this time you may have started on your wanderings and maybe are hiking back to Verdun.

I think it a pretty good idea to make a few tours before coming home unless you find that Italy is so much disturbed as to make it uncanny for a tourist person. But you can, I suppose, find that out. You are young yet, though the years stand still for none of us except your Aunt Lillian, and there will be problems left when finally you do amble back.

We have sworn off gifts this year, and are smiling and growing fat in the absence of the common purchase-worries.

I do not remember whether I have mentioned it before, but the high and increasing cost of living throughout the world and the difficulty in these surly times of keeping people on their jobs, has led, in this as in many other enterprises, to the declaration of a bonus on the G. A. Fund. This, with accrued interest, now amounts to some $200. It is now at your call by cable or express order or credit, in whatever form and payable at whatever place you may select and direct. Why not gad about a little since you will find so much to assuage and to reform when you get back that you will not readily escape again?

I am writing a popular article on yellow fever and so cannot spend more time on the likes o' ye.

March 14, 1920.

My dear Sam:

This is a response to your sketch from Amalfi on February 14th on the balcony overlooking the sea with the sun on your back, Czechoslovakia (reformed) on your mind and a new crusade in your horoscope. Yes, I approve, if you hold in mind that there is a United States, which needs reforming quite as much as any mid-European jawbreaker possibly can. Sense and good old

New England balance and honesty such as the early Pruddens cherished is what we need, is what we sorely need in public life here, and I confidently look for the recrudescence of the strain in the public career which you are to adorn. You needn't hurry back with any newer bolshevik stuff with which we are already surfeited. But if you wandered back our way with your gracious self before the summer is over and the mountain closed up, we should be glad.

However, you have been away so long, it seems long to me anyhow, that, like our soldiers, you will probably need reconstructional training to adapt you to our life and ways. So I am undertaking in a modest way to anticipate this by sending to you now and then in papers and clippings, glimpses of our progress and drift during the days before we may hope to have you back. Now, you know, WOMAN is in the political saddle, also, and is cavorting all over the place with views and hobbies and pet reforms and anti-suffrage antipathies and death on rum and to hell with tobacco (she says hell right out just like a man). Whereas, formerly, we used to get little missives from our lady friends, suggesting that it would be nice of us if we would send five "plunks" for a maternity hospital or a day nursery or a milk depot; or worse, enclose two ten dollar tickets to a slum benefit; now we are solicited right and left to join the movement to send Senator Wadsworth back to the farm because he—the brute—opposed THE SUFFRAGE; or we are advised that one who isn't heart and soul against some welfare project, which we have been advocating for twenty years perhaps, is a cumberer of the ground, a dead letter, reactionary, and, in fact, rotten (this has now become domesticated in the feminine political vocabulary). In a word, Sam, re-education and initiation into the new political world is before you, and you must not stay so long away.

But the fashions, too, are changing, so you need not wonder if occasionally I give you some glimpse of these which now with singular economy of aim serve to adorn the person and instruct in anatomy.

I discover that I am indulging in the gentle art of babbling, and hasten to business.

160 West 59th Street,
New York, April 28, 1920.

My dear Sam:

I was permitted to read a short time ago a bulletin from you, the same having just arrived at Prague and bowing to the burden of reconstruction of a race. Your young Prudden assurance—you all have it—should carry you far without a qualm. Reformers and mentors are sadly needed in your native land as you may have surmised, but perhaps we can spare you for a short time longer. In the meantime, I am endeavoring to keep you in touch with the trend of our drift and backward progress by a sample now and then of what drifts through my shack, now grave, now gay, and mostly foolish.

I am quite at sea as to how civilized or even human your entourage really is and what might be welcome, if anything, in the way of magazines or books or *Ladies' Home Journals* or *Saturday Evening Posts* or *Vogue* or *Town Topics* or the *Nation* or *New Republic* or other comics. Or do you run to deportment or sport or morals. How about a ouija board? By the way, if you are likely to want to have sent to you your bonus, which is lying at interest, any time before next autumn, you had better get busy and say when and how, because Spring is at hand and maybeso pretty soon I shall go to Jackson whence no funds can issue to foreign parts.

Yours as ever or even more so.

160 West Fifty-ninth Street,
New York, May 15, 1920.

My dear Samuel:

I have been so dazed by having so interesting a letter from you all for myself that I am only just beginning to be convalescent. The picture of the old doorway is stunning, and adorns the shelf where the Young Pruddens nest and the weird bric-a-brac sports itself.

The spring is here, the grass is greening, the buds are budding and dandelions, pet nurslings of the year, have come out to strut upon the sward. So much for a prologue.

You seem to query the principle on which my selections are made from the high- and low-brow world of print. Let me remind you that when you touch enquiringly upon the theme of Human Motive, you are setting forth upon a far-reaching, fickle and uncharted sea. On the whole, I should assay my motives as mixt. This is a great nation, and we, some of us, hope that it has a future, and when you get that new republic blithely on its way, we anticipate your return and that you as a voter—if you do not go back to Connecticut—will lend your sturdy help in our rehabilitation. And so we do not like to have you lose touch with any phase of our variegated existence—our problems, our humors, our amusements, our fashions, our national nightmares, and our blurred and politician bedevilled national aims, all are yours. You will be prepared, I trust, from these glimpses of contemporaneous life to move with grace and agility in whatever social or intellectual stratum your fate or the YwCa shall land you.

I was once a student in Prague but was more intent on pathology than on Prague and so remember little of it. If I were there now, I should try to find opportunity to call upon you.

So long.

160 West Fifty-ninth Street,
New York, June 17, 1920.

My dear Sam:

I suppose that the new Republic of which you seem to be so useful a pillar is still on the map and that you are still holding staunch.

However, if I should start off to rehearse all the excellencies which Rumor attributes to you, Summer would have ripened into Autumn ere I had more than begun. And this a business letter to say that I have placed to your credit at the American Express office in Paris, France, the sum of $250.00, or its equivalent in francs. I told the express folks that you were more or less well and favorably known all over more or less of the map of Europe, and that you had been a satellite of the Red Cross and were, if not a sun, at least a major planet in the YWCA. So that is all about that.

We hope presently to hear that you are fired or have retired so that you may take a look in at Jackson before the autumn has grown old.

. . . .

Do you carry a pen behind your ear now that you have become a functionary? Do you speak rough to your subordinates? Do you send them packing, as we do, if they use synthetic perfumery and enamel their faces? Do you ever in moments of wrath rip out blithering American invective, or ever in an unguarded hour descend to some of those painful and even heartbreaking effects of slang, which used so to make the judicious grieve in your native land? I ask these things just to keep your spiritual nature in condition and alert until I can find some more fitting literature to send.

I wish now to ask for my own information if the Czechoslovax's are all and always bearded to the limit as our pictures seem to show.

Now having reached the end of my paper, I quit, but remain as ever.

160 West Fifty-ninth Street,
New York, October 25, 1920.

My dear Sam:

Upon my list of things to do this autumn on getting back to town, I find "Sam Propaganda—renationalization." I have two classes of things to undertake, the underscored and the plain: the underscored are privileges, the plain are duty stunts—this is not plain. So I am sending off once in a while sundry stuff, the flotsam and jetsam and froth of the contemporaneous sea, expecting that some of it may reach you.

There isn't much news in my small bailiwick. I look out upon a Tammany-devastated park by day, but at night it is as serene and light-bespangled as ever and some solace for the sights and smells of the mighty, unkempt town. I have my little den over at the Rockefeller Institute where I potter about in a more or less inoffensive way over a variety of managerial stunts, less as a genuine worker than as a friend of the family.

I am at a fresh revision of the Story of the Bacteria, which seems to be still going after a period about as long as you. I came near sending along a whole set of this author's popular works when you joggled my pride with the tale of a copy—doubtless old—in your adopted town.

. . . .

Come along when you get ready; we shall all be glad to see you. There is always old one-sixty where serenity and space abound and a perpetual welcome for good old Sam.

The Christmas of 1920 was spent at the Inn at Grafton, Massachusetts, to be near Ted and his family, and presents were "taboo" on account of the Hoover fund for starving Europe that year, but there was a special celebration for little Peter Prudden, to which "Uncle Mitchell" contributed a family history in a "pome" of which we give the close.

So the Yankee Pruddens grew apace, of old Peter's stock
and kin;
And while none of them set the river afire, they knew how,
when it rained, to come in.
There were Peters and Williams and Johns and a number
of piouser names,
There were Abigals, Hannahs and Annes and Samuels
and Josephs and James'.

They were apt to be parsons and deacons, a lot of them
clung to the sod.
There were rich men and poor among 'em, and most of
them stuck to their God.
They adopted all sorts of professions, some hadn't much
calling at all,
A respectable lot were mechanics, but the Peters were best
of them all.

So the family tree grew bigger, and its branches spread
afar;
Near 300 years had waxed and waned—you know how
swift years are—
When the latest thing in Peters appeared in the Prudden
line,
On that branch of the tree that is marked on the chart as
"Ted and Evelyn."

Tho' it's hard to beat his forebears, with the virtues that they had,
He takes after his mother, and is sassy like his dad,
So this Prudden-Converse combine gives me a sort of hunch
That this latest of the Peters is the winner of the bunch.

LETTERS

Declining Invitations—Acknowledging Favors—To Dr. Biggs—To Dr. Starr—To Dr. Trudeau—To Dr. Hodenpyl—Concerning Search for Lincoln Mask—To Maxine Elliot—To Dr. Wood—To Dr. Kidder—About Rockefeller Institute Details—Philosophy of Later Years.

A MAN'S letters are so often an unconscious revelation of himself that a wider angle of acquaintance is offered by placing sample notes and letters in one chapter. These letters are arranged more to illustrate outstanding characteristics than with the thought of their connection with special phases of his life, and cover a range of dates from 1895 to 1924. Dr. Prudden was not a prolific letter-writer, and but few friends were favored with more than polite notes.

Evidence of his skill in declining invitations plausibly, either with the legitimate excuse of preoccupied time, the confession of nothing to say, or the frank admission that he could not, or would not, undertake the function, has already been given. Examples might be multiplied indefinitely of his ability to smooth gracefully the edge of ungraciousness even when dealing with personal friends.

From Dr. Prudden to Dr. Wm. Osler

October 8, 1901.

As I wired you last night, I cannot make a speech at the Virchow dinner because I do not and will not do such things, and am absolutely devoid of any sense of duty in that direction; so that since I am very doubtful whether

I shall be able to get to the dinner, I am clearly not to be thought of.

I have a notion that for one who did speech-make, your guidance of the affair would make duty pleasure. I am sorry that I cannot follow the flattering suggestion.

From Dr. Prudden to Dr. Meltzer

January 16, 1902.

If there were ever an occasion on which I should feel disposed to speak in the discussion of a paper, it would be upon a paper read by you; but I have very definitely marked out my own course in that matter, as perhaps you may remember, and have thus far held to the resolution not to discuss a paper unless I felt certain that I had something of real importance to contribute. I am sure that I should not have in this case, and, moreover, I am so very busy with the consideration of many things that I could not look forward to the opportunity for special preparation.

So with very best will toward your suggestion, I cannot see my way clear to permitting my name to be put on the programme. Nevertheless, I shall be much pleased to confer with you about the paper here at such time as may suit your convenience.

From Dr. Henry Hun to Dr. Prudden

Albany, N. Y.
January 19, 1902.

I am going to give a dinner to a few physicians from out of town on Tuesday evening, January the twenty-eighth. On Wednesday evening following (Jan. 29th), occurs the annual dinner of the State Society. Be a good boy and come up to both these dinners and stay with me as long as you will. I have long tried to get you up here. Do not disappoint me this time. Not to speak of our hospitals old and new, I want you to look over the Bender Laboratory and the State Antitoxine laboratory.

Please answer "yes" promptly as I expect to go out of town for a few days the middle of this week.

From Dr. Prudden to Dr. Henry Hun

January 20, 1902.

You are a good man and true, the very salt of the earth, and if there were anyone at whose bidding I would drop my occupation and join in the revelries, it would be yours. But about these times I am so bound up with all sorts of things to do that I do not see my way clear to breaking off. I should like to come, should come if I could; but it is impracticable.

Thank you all the same, and may the diners have pleasure worthy of the host.

Notes of acknowledgment of books, reprints, and papers sent him by friends, former students, and fellow scientists outnumber all others. There was often among his papers a memorandum of fifteen or twenty sent at a time. Such notes are brief but usually carry a word of appreciation. Those chosen are fair samples of scores of others.

From Dr. Prudden to Chas G. Wilson, President of the Health Department

September 17, 1897.

Let me congratulate you upon the last annual Report. It is a veritable mine of valuable statistics, and full of the most instructive detail.

I wish that the people of this city could realize how much has been done to guard the public health and how well it has been done. The best of it is that the influence of the Department reaches all over the country and far beyond its limits.

From Dr. Prudden to Mr. W. W. Newell

October 30, 1897.

Yes, the copy of "King Arthur and His Table Round" came duly, to my pride and delight. We grad-grind fellows are peculiarly sensitive to such compliments as inscribed books out of the domain of literature. I sat down to write you at once, but yielded to the impulse to turn the beautiful pages first, and, in fact, I have been so much fascinated that I have not had time out of my spare moments both to read in this and to tell you how I liked it, so I kept on reading. I do not know yet how much of it is due to you and how much to the old man, but I find a charm in the tales which it is altogether beyond my capacity to express. For now, then, I simply thank you very much.

From Dr. Prudden to Dr. Gardiner

February 13, 1901.

I should long ago have written to you acknowledging the receipt of your new volume, but, as you know, hereabout many things crowd.

I think it is very seldom that so thoroughly satisfactory and useful a little book comes from the press. You are to be unreservedly congratulated. It is clear, it is readable and full of meat.

I was much interested the other day to hear Trudeau speak of the book in most enthusiastic fashion. He is very much gratified at the dedication.

From Dr. Prudden to Dr. George H. F. Nuttall, of the University of Cambridge, England

February 23, 1901.

I thank you for sending to me reprints of your recent and, as ever, most satisfactory articles. I congratulate you on the fine appearance of the first number of the journal.

From Dr. Prudden to Dr. James Ewing

1899

I want to congratulate you on the appearance of your book and on the wealth of interesting and important lore which you have brought together.

I do not, of course, know much about the blood, but the possibilities of learning seem much brighter now. The preface is admirable, and I am eager for time to try to assimilate the book.

For the dedication which it was very generous of you to make, I thank you.

From Dr. Prudden to Professor F. G. Novy, of the University of Michigan

December 31, 1901.

More than all others of my Christmas presents, I think I have enjoyed your handiwork. We have all been much amazed and entertained and instructed by the performances of the giant sac. You seem to be a wizard with cellodin, and if my forebears had had you within a hundred miles of Plymouth Rock, you would surely have been burned.

Many thanks.

From Dr. Prudden to Mr. F. S. Dellenbaugh

December 23, 1902.

I have been so much occupied in my spare moments for the past few days with the fascinating "Romance of the Colorado River" that I have not found time before to acknowledge the courtesy of a complimentary copy. The story is so interesting, is so well told, and is so full of the spirit and inspiration of the great open country that it has been a source of much pleasure and profit to me. I congratulate you heartily on this notable achievement in book writing and making. I could not help snickering at the neatness and dispatch with which you disembowel —— and —— and poor old ——.

I envy you the achievement and thank you for the copy of the book.

From Dr. Prudden to Dr. Henry Hun of Albany

April 29, 1909.

I thank you for sending to me your address on Psychotherapy. To read it is the next best thing—though not so good—to hearing it issue from your fat form. As it is, I find it is able, brilliant, clear, dramatic, erudite, forceful, graceful, humorous, inspiring, judicial, keen, lurid, modest, noble, objective, perspicuous, quaint, remarkable, spirited, terse, unbiased, vivid, winning, Xenocratic, yeastly, zealous—and altogether damn good.

See you in Washington.

From Dr. Prudden to Charles F. Lummis

February 15, 1909.

I am sending to you herewith a blank filled out as suggested by your letter of October 30. But perhaps this does not belong in your records since I asked a little while ago to be retired from membership in the Southwest Society. You, however, know the uses of the waste basket, so that if this is now useless, it can be disposed of.

I thank you for sending to me a copy of your library report, which is most interesting: a thing so thoroughly exceptional in a routine report that I admire your skill and facility. I wonder if there is anything you could not write about fascinatingly, if you set to work. I have my doubts.

From Dr. Prudden to Dr. James Ewing

May 26, 1919.

There is so much which is interesting in your new book, the first work relating to medicine which I have fairly read or cared much to read in the last half dozen years, that I have been slow in getting ready to thank you for sending me a copy.

I think your way of looking at tumors is most illuminating, and charged with common sense. You do not, as too many of us have done, let classifications lure you into pseudoscientific distinctions, which really get you no forrarder. And the wealth of stuff which you have woven in such a readable fashion into all your chapters is amazing.

I suppose when the guy comes along who can tell us why and how cells are, we may talk wisely of the reason for tumors. In the meantime you have discreetly put the cards on the table and gone on playing the game. The pictures are bully.

If the pathologist and his satellite, the practitioner, both don't sing your praises for this book, may the devil catch them both and treat the pathologist, at least, especially rough.

I congratulate you.

From Dr. Prudden to Dr. Jonathan Wright

June 18, 1919.

I have been intending for five months to tell you how much I enjoyed "Belief Among Primitive Men" in the *Scientific Monthly*, but perhaps to you, who deal with culture periods, that does not seem as long a time as it does to me. However, I enjoyed the article very much, and am hoping that presently you will get all your stuff together in a book so that we can lie off and read it as a whole and not piecemeal.

I wish that you could go out west as I have done and be domesticated among some of our contemporary primitive folks, a few of whom are living in the light of the old notions. It would delight you to see them cure tuberculosis, hiccoughs, dysentery, eczema, apoplexy, and warts with songs and dances.

From Dr. Prudden to Dr. W. G. McCallum, his successor in the Chair of Pathology at the P. and S.

October 26, 1916.

I thank you for sending to me a copy of your new book, and I have been mightily interested in reading it.

Your abandonment of the old traditional routine method has given you an opportunity to make a very fascinating story of it, which it seems to me you have most successfully used.

The whole field is marshalled in so philosophical and withal so practical a fashion, your presentation is so vivid that the old generation of doctors as well as the new are certain to be stimulated and greatly helped.

The illustrations are fine and well-selected, and the whole make-up of the book attractive. I heartily congratulate you.

Of letters to associates upon the faculty there are but few, and largely in reference to routine work. They indicate a coöperative, though independent, spirit and a touch of individuality even in routine work.

From Dr. Prudden to Dr. Starr

January 27, 1897.

While I am quite in sympathy with the purposes of the Bulletin in having special articles on the Department, I still think that in order to be of any value at all, they must be well thought out and carefully prepared.

You will pardon me if I note a certain grade of preposterousness in your request of January 26, that I should have an article on the Pathological Department ready by the 5th of February—an article which, if I understand the purposes of the Bulletin, should have somewhat of the finish and character of a magazine article. So much for my kick.

It would really be impossible for me to prepare such an article, for I scarcely have the outlook of an hour between this and then. Moreover, I think that the article on the Department of Pathology should not be written until we see our way clear in the establishing of the course in Clinical Microscopy, 4th year, when I shall be able to work out something which I think will be worthwhile. But whenever the time does come, certainly for me, I shall want at least three months in which to let the matter be crystallizing.

So while I should like to be useful in an emergency, I cannot help in this for lack of time and lack of sympathy with this particular emergency.

From Dr. Prudden to Dr. Starr

January 3, 1898.

I send you herewith a draft of an article for your old magazine, the Bulletin. I wish that you could find time to look it over and let me know whether you think it will do and return it to me because I want to make a few minor changes before it goes in. You will see that I have thought it wise, from the standpoint of a populariser, to devote a good deal of space to the outline of what modern pathology really is, but it seemed to me that simply to describe the rooms and apparatus and academic work would be of little general interest, but what I should like especially to have you do, if you will, is to tell me if the first part is too long, or if the whole thing seems too long and cumbersome (Osborn's article in the last number was only half as long as this), or make any suggestions which your good judgment may indicate. You see if you are an editor, you have got to do some work.

From Dr. Prudden to Dr. Starr

January 5, 1898.

I thank you heartily for going over the manuscript so carefully and for your wise, critical emendations, which I have most gladly adopted. I am mightily pleased that you think well of the article. I am still a little apprehensive lest it may be too long, and if your colleagues should think it is, I could possibly shorten it a little, but not much, and preserve the logic.

He saw Dr. Biggs too frequently for much correspondence with him, but such letters as are found are an added testimony to the cordial relations between the two men.

From Dr. Prudden to Dr. Biggs

November 11, 1896.

I enclose herewith the circular regarding the blood tests to which I have had the gall to suggest turnings about without much essential change. You takes them or you leaves them as you like.

After the line marked on page I, I suggest a division of the remainder, which I herewith enclose. It simply does away with a bit of redundancy. I think it is first-rate, and am glad you take the attitude of instituting an investigation of the matter rather than considering it an accomplished method.

Thanks for the tuberculosis circulars, which I will get to the nurses presently.

From Dr. Prudden to Dr. Biggs

April 18, 1897.

I send you herewith the introductory fancy which my ganglion cells have woven, which might or might not be substituted for the first paragraph of your circular. Maybe it is too long, maybe it is not true, maybe you don't like it, maybe you had better burn it up. Certainly I should be satisfied with whatever you might do with it.

I left untouched the last half of the second paragraph on page 4 because I do not know quite what you intended.

From Dr. Prudden to Dr. Biggs

May 11, 1897.

I have been over the circulars, and they all seem to be very much to the point. I have made here and there some little possible changes. In the circular on bacteriological examination in the earlier diagnosis of tuberculosis in the fourth paragraph it seems to me that possibly the expressions might be a little ameliorated, as I have indicated.

In the new circular of information on tuberculosis, there are also two or three suggestions. It seems to me that the expression toward the top of that page of the circular regarding the notification of tuberculosis within a week of the time the case comes under observation, is not yet quite right. It is apparently all right for those who have lately come under observation to say within one week of such time, but just before that and embraced in the same phrase, you require the person who is in hand to be notified, and that can't very well be within a week of such time.

I have pasted in the diphtheria circular as the last paragraph of the fourth section your celebrated Consulting Board's evolvement on that subject.

From Dr. Prudden to Dr. Biggs

December 21, 1897.

I have been through the mountain of manuscript which you sent over the other day, and I congratulate you on the noteworthy contributions to science which the papers hold.

Mrs. Biggs had submitted to him the draft of a protest to be signed by representative women against the dismissal of Dr. A. H. Doty from his post as Health Officer of the Port of New York, in which they heartily endorsed "his admirable, scientific, and successful work." Dr. Prudden's reply furnishes an indication of his method in suggesting revisions to his friends.

From Dr. Prudden to Mrs. Biggs

Dr. Biggs and I have so often been over documents together mutually suggesting our particular fancies here and there, that I am heartened, as I should otherwise not readily be, to undertake the bidding of the châtelaine of 113.

It is very good just as you sent it, and the little interpolations suggested I trust you will cut out if they do not appeal to you. That is the contract which Dr. Biggs and I always agree to in our work together.

I thought perhaps in line 3 it might be well not to limit to the Mediterranean since this is only a post for many countries.

Perhaps in line 4 one might not admit that we have been exposed to risks from cholera etc. since that is one of the contentions of the Governor and his harlequin Bulger.

Maybe in line 8 some other word than efficient might not be so nearly the same as successful.

Line 11 might be expanded by substituting a larger achievement for *work*. But perhaps you do not want the thing to be too long.

I think in line 5 from bottom the charges were really made against the service rather than against Dr. Doty individually.

If you want to make a bit of a slap at the Governor, possibly something like this would do at the end.

Such long and distinguished service as Dr. Doty has rendered to this state is well-deserving, we believe, of commendation not abuse at the hands of its chief executive.

But pray don't put it in if it seems too snappy or too long.

I guess we are all indignant. I have been making faces at the Governor to the neglect of my other duties ever since his shabby letter.

I doubt that we can save him—Dr. Doty—just now from the hands of the spoiler, but we can make the spoiler look morally like a last year's scarecrow sooner or later.

Forgive the scrawling, as I have forgotten how to write.

Now don't use any of these random suggestions unless they really appeal to you.

Thoroughly as he enjoyed helping men into their proper niches in the world, he was too honest to use his influence unless he knew the man, but his refusals were usually softened by a kindly explanation. Thus to a man in New Mexico, whom he knew only slightly, who had asked his good offices to secure his appointment as local surgeon for the Atchison, Topeka, & Santa Fé R.R. he replied:

I should be very glad if I could be useful to you in the matter of a commendatory letter, but have found it necessary to absolutely restrict myself in such matters to my own special line of work, feeling that letters outside of one's own ken were not only of little value but just a trifle disingenuous. So while I have my own favorable opinion as to the suitability of the appointment which you mention, I should not feel justified in urging it upon the Railroad people.

You will appreciate, I am sure, my position and the ground which I have felt compelled to assume in the whole matter of letter-writing.

To another he wrote as follows:

November 9, 1896.

I should be very glad to aid you in securing the Chicago place if in any fair way I can do so.

I actually know, however, so little of your work, outside from publications, of which they could judge as well as I, that I do not think it would be fair to you or just to myself to write a letter. If, however, you should care to refer them to me for such judgment as I can have justly formed, I should be glad to be helpful to you in the matter.

I am sorry that I cannot be more really helpful, but I have long ago concluded that in such things as this, it is better for all concerned to have one's recommendations rest firmly on the actualities.

From Dr. Prudden to one of his students

May 5, 1903.

In reply to your letter of the second inst., I would say that I do not at all agree with your view that outside influence is necessary to secure a position in New York, and I think you would be making a great mistake if you entered upon your career here with such a conviction. It is one's own record, his presence, and his established capacity for work which is to be relied upon. If Dr. Thacher shall ask for my opinion of your capacity as it may have been formed from your work as a student, I shall of course be much pleased to respond; but I should not under any circumstances feel justified in offering out of hand a gratuitous commendation for any special position.

If you care to drop in at the laboratory some afternoon between three and five, I shall be pleased to confer with you further in regard to your outlook.

In May, 1914, Dr. Alfred A. Woodhull of Princeton very thoughtfully sent him an extract from a letter written in 1890 by Sir Henry W. Acland to the late Dr. John S. Billings commending *The Story of the Bacteria,* saying, "We want cheery sketches of this kind in everything for intelligent people who want to know the outcome, but have no time or brains for the tiresome details which the ordinary dull manual writer produces. No one but a Yankee can write them. I think the first chapter is good as a play."

Dr. Prudden acknowledged Dr. Woodhull's courtesy in the following note:

Thank you for sending to me the extract from the letter of Sir Henry Acland, which is interesting and, of course, gratifying. I appreciate and delight in the mark of your friendly spirit.

From Dr. Prudden to the Secretary of his class at Yale

May 10, 1898.

I did receive a copy of the *Alumni Weekly* some time ago, and if I had known that you were one of the editors, I should have laid it away, or framed it, or something. I wish that I had stuff to send you which could be worked over into material for the magnification of your office, but it is, alack, a most hum-drum set of themes which engages my working hours: such dross indeed, as could scarcely be turned to gold even by your pen. I send by this mail a semi-popular account of the material achievements of twenty-five years of work in organization in a special line of science, but fear lest there may be nothing in it for your uses.

There will be sent to you some time in June a popular account of an out-of-doors summer in the far Southwest.

I am off again next month for the Southwest country with pack-train and Indian escort to some far-off ruins which I have heard of. But I can't sit here gossiping with you, especially about myself, any longer, or the day's tasks will be left undone.

From Dr. Prudden to Dr. Jonathan Wright, who had sent him a picture of the Southbury parsonage

February 28, 1903.

I was a bit surprised that even so diligent a student not only of the highways but of the byways of science should have unearthed so obscure a circumstance in a byway of the byways. I am delighted, however, to have a picture of an old homestead of my parson pater, but the hinted birthplace was an even more obscure hamlet than Southbury.

I was horrified a few days ago when shown the stately volume which you have committed. Why become a slave to a textbook? It will haunt you for years and keep you hustling to hold it current and up to the high grade which its first edition assumes.

I have been expecting a blast from you about the new immunity lore, and we sure got a good one. We shall lie low for a while, and you will presently see that the new jargon is simplicity itself as compared with Nature.

Come over and take a short course in practical haemolysis—fee, twenty-five dollars—and instead of spewing the new words out, you will think them better than chewing-gum.

But few of the many letters to and from Dr. Trudeau are needed to illustrate their friendship already mentioned.

From Dr. Prudden to Dr. Trudeau

January 1, 1897.

Dr. Biggs tells me that on the twentieth of this month, there is to be a meeting at the Academy of Medicine about the importance and necessity and safety, etc. of special hospitals for pulmonary tuberculosis.

A doctor who has cruised among them a good deal in Europe, Dr. Hance, Biggs, Janeway, and others are to read and discuss. I am intending to present some resolutions to bring the matter to a focus. Now what Biggs and I think, and we know that all the world would agree with us, is that if you feel able and willing to do it, a short paper from you perhaps general, perhaps statistical, based on the experience of the sanitarium, on the importance of separate housing and treatment of consumptives, would be of great value in giving strength to the undertaking.

Can you, would you, or will you think about it? If yes, I will find out more of detail and communicate with you.

From Dr. Prudden to Dr. Trudeau

January 12, 1897.

I am glad that you are willing to labor thus in distant vineyards, and we should be glad to have the short paper which you outline, dealing with the advantages of special treatment of promising cases of pulmonary tuberculosis. I should be glad to read the paper myself at the meeting if you will send it to me and are willing that I should do so, as I have only some small remarks to make for myself.

Facsimile of Letter to Dr. Trudeau

in Dr. Prudden's handwriting. This letter accompanied the gift of a new microscope from the Laboratory workers of the "P. & S." when Dr. Trudeau was ill in New York and had just lost by fire his home in Saranac and all its contents. By courtesy of Dr. Baldwin it is reproduced from the memorabilia at Saranac. The incident is mentioned on page 181 of the Trudeau Autobiography.

DEPARTMENT OF PATHOLOGY
OF THE COLLEGE OF PHYSICIANS AND SURGEONS,
437 WEST 59TH STREET,
NEW YORK.

My dear Doctor Prudden

We men at the laboratory want to make you a Christmas present and we are so eager in wanting to that we cannot wait till the proper time.

I don't think we have decided whether we want to do this most because we appreciate the good work you are always doing. in our line and in others: or because you have had more pluck than anybody we know: or because you have been so often helpful to us and made us always glad to have you here: or because —— well the fact is, old fellow, we like you and want you to know it and so here we are in a row. bowing our ailing Christmas greeting.

From Dr. Prudden to Dr. Trudeau

January 22, 1897.

The Academy meeting was last night. I imagined a rustle of dissent when as your turn came, instead of your classic presence, the people were greeted with the attenuated spectacle of your substitute, but the paper was cordially appreciated and was afterwards subject to many flattering comments. It is bound to do a great deal of good in the situation in general and to our cause. I was very glad that you laid so much and such excellent stress upon the importance of early diagnosis. For myself, I thought the whole paper admirable, clear, to the point, graphic, and vigorous. I have only one fault to find with it, and that is that in going over the manuscript I found nothing to criticise, and this condition of affairs, as you may know, or at least Hodenpyl will tell you, is so rare with me that I rather resent the loss of the opportunity to gratify the fiendish delight of picking manuscript to pieces.

Of course the Fool was there in force, and went through his usual wailings over the aggressive tyrannies of the Health Board, the good old times when a patient with tuberculosis could be lulled into a sense of security for a few months more, etc., etc.

From Dr. Prudden to Dr. Trudeau

March 12, 1897.

Your note about the letter to the Medical News is just here, and my feeling is that if you feel disposed to write a letter for publication at all, whatever you write would probably do good to the cause, and you would not be likely to say anything which would interfere with the purposes of the Board of Health, as far as I know them. At the same time, I confess that my first feeling is that you have already covered the matters which Goffe mentions, in your paper, and I don't think it would be either useful or prudent to enter into any discussion with the Shradyites. I think the maintenance of the controversy on this subject with people who are so ill-informed, so viciously unfair, and so hopelessly in the wrong as Shrady and his pals in this matter, is a mistake, and only keeps the longer alight the silly spluttering flame, which if left alone would quickly die out. So, to answer more directly your queries I would say: First, my impression would be that it would be better not to write a letter for publication at all, unless you have some points of view which you would like to urge, of non-controversial nature; and, second, that so far as I know, anything which you would write along the lines followed by your paper, or any general subject, would be useful if you felt like doing it in this way.

You have yourself to blame for this long preachment because you have touched me off so early in the morning.

From Dr. Prudden to Dr. Trudeau

March 20, 1897.

Thanks for the reprint of the "Sanitaria" article, which is bound to do much good.

Nothing seems to be new in these parts except new days for new drudgeries.

The little scattering gang of purps yawp and snarl at the heels of the Board of Health, ceasing now and then, purp-like, to snarl at each other. Nobody seems to care much about it, and it will probably cease when the wind changes.

. . . .

Tell Hodenpyl that life is not altogether extinct in the old pathological carcass of which he is a member, but that it is at a somewhat low ebb; that we are hoping for the best and wanting him for next year.

From Dr. Prudden to Dr. Trudeau

October 28, 1897.

I am again a suitor for your favor in the matter of a culture of tubercle bacillus. Our bacteriological department here does not seem to succeed very well in keeping it alive, and I should like to have a bit up my sleeve, so to speak. Anything which is alive will answer, so that we may transplant.

I suppose you are beginning to shiver up your way and cower about the fire-place. When it gets so cold you can't stand it, come down here and get warm over our registers.

From Dr. Prudden to Dr. Trudeau

May 26, 1899.

Our Professor John G. Curtis is so gifted in speech that to his lot usually falls the duty, this time a pleasant one, of representing the Faculty in speech at the Commencement; so he is to face you on that occasion with a suggestion of your past deeds. The arraignment will not be severe nor, I fancy, will it be detailed, but in order that Curtis may get into the spirit of the thing, I wish that you would send to me a list of your publications in scientific medicine as well as one of the reports of the Sanitarium which has pictures in it. Curtis asked me to get these for him and also to express what, of course, we all feel, his great delight at the action of the Trustees. By the way wasn't Draper at the bottom of this? Or Kinnicutt? Whoever he was, he is a good boy.

I hope that your gown is progressing and will set well. I fancy that you are so much accustomed to walking through the brush that a gilt tassel dangling in your left eye wont incommode you.

Let me have, if you can, this little bibliography forthwith.

From Dr. Prudden to Dr. John G. Curtis, of Columbia University

May 23, 1899.

How naturally we all turn to you when the silver tongue is called for and how complacently we sit in the conviction that our chosen spokesman will say the right thing and in the right way!

I am so fond of Trudeau and so pleased that he should be thus honored that I am almost inclined to forgive the ribald tone of your letter with its uncouth allusions to our pets and say what I can about Trudeau's work.

His career has been somewhat unusual in that he has constantly combined laboratory studies with active practice and philanthropic work in the establishment of his sanatarium. Of course, you know all about how Trudeau was carried into the woods on a litter and only little by little got the better of his own stock of bacilli, and then set to work to make the woods available for the cure of others. At first, it was simply hum-drum, ordinary medical practice. But just as soon as Koch's announcement of the tubercle bacillus came, Trudeau was down in my laboratory and was at work at it, as he is today. He had experimented in many lines, mostly those bearing upon factors predisposing to tuberculosis and favoring recovery, and has obtained definite results, which are of practical as well as theoretical significance. He has founded and maintained an excellent laboratory there in the woods, and by private subscriptions has secured funds for the cottage sanitarium as it now stands and for its partial endowment.

The man has made his living by private practice, has established and maintained the sanitarium, from which he draws no salary, and has done and inspired much scientific work anent tuberculosis.

So, I think that if you cannot weave into sonorous periods this picture of the scientist, the philanthropist, the healer, and the evolvement under his influence of this haven for the stricken in the heart of the primeval forest, etc., etc., etc., you are no good and deserve to be decrowned.

These letters were written to Dr. Hodenpyl, his coworker and friend, during the latter's enforced stay at Saranac Lake.

February 8, 1897.

I imagine you growing sleek and fat apace, and I query whether in your coquetting with Dame Nature you still hold an interest in the doings of the attenuated and hollow-eyed mortals who still stand in the pathway of livers and lights as they drift in to 437 day after day to get their serial numbers and be swallowed up in the cold storage. However, we still hold the fort, albeit this winter with an unusual amount of friction—exactly what holding a fort with friction would be, I hardly see myself, but let that pass.

The ragged regiment of the physically handicapped led by your martial self, has been now and then quite popular. Larkin led off with a red finger and a swollen arm. Norrie followed suit ditto. Robert added in his case axillary knobs; Van Giesen, wild-eyed, frouzy-haired, and incoherent had to secure leave of absence for three weeks, from which he came back wilder-eyed and more incoherent than ever, having spent all the time in work. Cheeseman, with a milk-croaking laryngitis, felt that his duties to his ancestors, constituents, and descendants compelled him to take a week or so at Lakewood.

Then came Ely with his finger and fever and arm. He was laid by for ten days, while I pranced around upstairs, the understudy of an understudy, now demonstrating, now haranguing on hydrophobia, now trotting out my armamentarium of spit cups, etc.

Then Ewing, insisting upon keeping at work when his turn came for a poisoned finger and a red-streaked arm, a nobby axilla, found himself one fine afternoon at the Roosevelt Hospital with McBurney taking out his axillary offender. He is now out of bed and beginning to recuperate.

I recount to you this tale of woe so that you may more keenly appreciate the placid attractions of Saranac. Still we are doing very well, and the spring does not look far away.

Perhaps it may interest you to know I have another magazine article accepted and in the way of being illustrated.

I have received official permission from President Low for your absence the remainder of the year.

We began the second division of the Pathological class last week, which promises fairly well. But the morning is nearly up, and I cannot gossip with you any longer.

March 31, 1897.

We are always glad to hear from you, and have come always to expect that the report will be favorable.

I fancy from what you say that when you come down to visit us presently, it may be wise for you to send in your card lest we may not recognize you in the fat person whom you describe. That I fancy is going to be the only drawback for next year's work, that you will be so plump and fat that you will be unable to get around in your accustomed lively, more or less graceful fashion; but in any event, your nest will be not to say warm, as you hope, but more likely red hot, for business fairly booms along our lines now.

June 14, 1902.

I thank you for the address. My credit is saved. I am largely popular among the American aborigines on account of the long, slender fibers of my tobacco.

I am truly surprised to find you still dallying beside the sea. Don't go playing any tricks with yourself in Canada. You see at two pounds a week, six weeks only gives you twelve pounds extra. We can relieve you of that in the autumn at short notice.

The following letters show his characteristic readiness to help a friend in any quest that seemed to him worth while. A lady wished to obtain a duplicate of his Lincoln mask as a present to his friend, Dr. Herter, and wrote asking for an address where she might find one. The letters are more significant from the fact that the incident took place during the last busy winter of his professorship under the pressure of many academic and other duties.

From Dr. Prudden

January 23, 1909.

Your letter recalls very pleasant chats with you at sundry times, and the subject of it interests me very much. I have especially noted Dr. Herter's admiration for the Lincoln mask, and since he was last here, have several times thought that it would be a pleasant thing to get a duplicate for him; but I would cheerfully waive my claims to the privilege, and should be very glad to help you to secure, if possible, another copy.

This is, however, not quite easy because I have lost all trace of the man who made this mask. His name was J. Decomps, 910 West Thirty-third Street,—a little old Frenchman who was quite a favorite with certain artists and who made copies of various classical subjects—

Barye's animals etc. He was an interesting little man, growing old, and about retiring in favor of his son, who in latter times had done most of the actual work. I think that he told me that the mould for this mask, as well as for several other masks, he had been able to secure through the favor of Laurence Hutton, some of the masks in whose well-known collection he was privileged to copy.

Shortly after Dr. Herter last saw the mask in my library, I strolled down to West Thirty-third Street, thinking to find the old man there, but there was a great hole in the earth where the Pennsylvania station is to be, and I could get no trace of him from the neighbors on the north side of the street or in other streets. The city directory is non-committal except for a clerk of this name in Brooklyn, nor does the business directory give any clew.

Your letter with its admirable purpose has inspired me with new energy in the matter, and when I return from a few days at Atlantic City, I shall make some inquiries of the artist folk in the Century and others, to see if I can not get on the trail of the little Frenchman. I will, if I may, advise you later of the results of this quest. If we do not find him, we shall have to consider the feasibility of a replica from my mask.

From Dr. Prudden

February 1, 1909.

The trail of the little old Frenchman was taken up again on my return from the South, under the inspiration of your appreciative note, and it led to the Land of Silence whither it appears the little man had several years ago turned his footsteps. Then nothing being learned about his son, the lead was towards some of the little man's many patrons in New York, among whom many classes of folks were numbered—artists, because he was a real artist; ladies and others of the social world, because he was at one time a fad; and impecunious fellows of all sorts, because there they could secure reproductions of classic art at rates which were not incompatible with the length of their purses. You could get the Samothracean Victory for the price of a dinner, and other things "according." But none of these people to whom I had access knew what had become of the little man's moulds.

So the next thing was to find out from the workers of plaster in New York, of whom there appear to be about twenty, whether any one had bought the moulds in the distribution of his effects. This line was just started when a particularly intelligent plasterman of whom I was inquiring about the reproduction of a mask said: "If you want the Lincoln life-mask, why don't you look up Volk?" So I looked up Volk, and here the story takes a sudden jump, for it was, I think, in 1860, that the Chicago sculptor, Leonard W. Volk, made this mask of Lincoln at Springfield. From the mask he made a statue of Lincoln. At his death he left the mould of the mask and the bust to his son, who now with his son is an artist, having a studio, No. 11, in the studio building at the corner of Fortieth Street and Sixth Avenue. I had a very interesting chat with Volk, the second, who has just finished a portrait of Lincoln, who has the original mould of the mask, and who will furnish a copy to anyone who applies to him. He also has a rather interesting cast of Lincoln's hand.

So here the trail, which it has been of so much interest to me to follow, ends in the studio of Mr. Volk, Room 11, Sixth Avenue and Fortieth Street. He said that anyone who wished to secure the mask could call there in the afternoon, unannounced, or an appointment could be made with him, or one might by letter order a copy. I think that you would be interested to call at the studio, for Mr. Volk was, as he says, brought up on the Lincoln tradition and in the Lincoln atmosphere. He has the chair in which

Lincoln sat when the mask was being made. His new portrait and its photographs are, I think, worth seeing, and perhaps there might be some choice as to the form which the mask which you may want should have.

There was in the Century Magazine of December, 1881, an article by the older Volk, entitled "The Lincoln Life Mask and How It Was Made." It appears that my copy of the mask, which Dr. Herter has seen, is a replica presumably from one in Laurence Hutton's collection, and so is not as direct from the original as the one which you may secure will be. Laurence Hutton's "Portraits in Plaster" in Harper's Magazine for 1892, speaks of this mask in an interesting way, as it does of many others which are now in the Princeton library.

I have had lots of pleasure seeking these clues to the Lincoln mask, and hope that you will have an equally agreeable experience in securing a copy.

From Dr. Prudden

February 3, 1909.

I have just received a note from one of the early patrons of the little Frenchman through whom I sought to get upon his track, which says, "His nephews have gone on with his work, and have all his old casts and some good new ones, and they have preserved the same delightful atmosphere of the old man's place. They are J. de Casteras and Brother, 142 West 28th Street."

I quote my correspondent to you not to prolong your quest but just to complete the story of your little excursion by proxy along the byways of the artist world.

The responses of the lady were most appreciative, and a portion of her part in the correspondence, as well as his, is essential to the understanding of his last letter.

To Dr. Prudden

I don't know how I am to thank you unless you will come sometime to see me and let me tell you my appreciation of your kindness—if you, by chance, care for music, I could perhaps express myself better through that than by words. But I remember that Dr. Herter told me you were something of a hermit—exaggeration probably—but if it is true, do you remember what used to happen to hermits in the old days? People made pilgrimages for the good of their souls to the good men's cells. Today when I told Mrs. Herter the story of the search for the mask, she exclaimed, "Oh how good of Dr. Prudden! Don't you think we might go to see him?" Do you think we might?

To Dr. Prudden

The silence by which my last note was answered was a bit disconcerting, but you see I reassure myself in remembering the friendliness of your previous response and hope you will be interested to know that the lifemask of Lincoln, which I ordered in bronze, has at last been finished. I took it to Dr. Herter today, together with your notes to me, to show him how large a share you have in the gift. You would have been more than repaid for any trouble if you could have seen his surprise and delight. Lincoln is Dr. Herter's hero of heroes, and this wonderful face will be a real source of inspiration and strength to him.

I'm sorry you don't want to be friends with me, because sometime I, too, might have had the chance to do you a good turn, and then I should so like to know better the man whose chapters on the Grand Canyon and World-making have often taken me out into the big, quiet spaces, and rested and refreshed me after some of these tiring, crowded New York days; but I'm afraid I understand and sympathize with your desire to be let alone, and must accept with mingled amusement and regret the fact that you will have none of my friendship—all the same it would do you no harm!

From Dr. Prudden

May 15, 1909.

It was sure gracious of you to let me know how the affair of the Lincoln mask—sounds like a detective story—came out and most generous to mention to Dr. Herter that I had been interested in the early search. He has written me of his delight in your gift.

I should be penitent for the long delay in responding to your note, but I can't make out just how penitent to be, since the date is not upon it, and then the world hasn't stopped a minute since it came. I have not, I think, ever before been so flatteringly and gracefully chidden for being a hermit. But you must remember that we hermits are a queer lot and are the losers by it! That we are not partial to parlors and are unbound by customs and conventions!

Your attitude of comprehending tolerance toward our guild is admirable, and my chief consolation in having fallen a little in your good graces—only temporarily may I hope—is that I confidently expect sometime to meet you on the borders of the great Canyon or elsewhere in the land of wide horizons where I shall more adequately requite your friendliness and show you some of my haunts where life is free and hermits, for the time are, human.

Meanwhile, I shall cherish the sense of your appreciation of the outdoor spirit.

Fortunately we have one of the characteristic letters to which Dr. Wood has alluded as illustrative of his attitude toward work that he had passed over to others.

From Dr. Prudden to Dr. Wood

March 15, 1919.

They have sent me a copy of the only book, and I have been delightedly and instructedly wandering among its more or less familiar pages; now admiring the apt phrase or happy word or fresh fact or new outlook by which you have conjured the old stuff into life, and again wondering at your patience and pluck in building solid and up to date science where erst some wordy garden smiled.

The tumor chapter which you and Dr. Woglom have framed is a creation not a revision, and makes me wish that you and he were more avowedly professing pedagogues so that a post graduate course were practicable for the likes o' me. Then when Frank and Prime wandered into their bailiwick—never mine, I vow, but under protest—of course certain wobbly incertitudes got their comeuppance, and real things came forth; would that they had been persuaded to throw light into more dark corners and salvage other venerable superficialities.

The new cuts are fine and well placed. It must have been sheer good nature which led you to keep some of the antique travesties of tissue much fitter now for the psychic or historic museum than for such spruce company as you have so generously introduced.

Then Miss Wood's part is certainly fine—a book in itself: somewhat sketchy perhaps for general literature or continuous reading, and a trifle detached in its connotations; but there are mighty few books which contain 1109 pages crammed with alleged facts without telling some lies.

Really the only fault I find is with the preface. You should have said, I think, something like this,—"I galvanized this venerable relic before into a reasonable and useful extension of its natural life; and now, still actuated by a sense of generous loyalty to an old colleague and by regard for the wellbeing of Science and the uplift as well as the upkeep of the General Practitioner, I and my associates have breathed into it anew the Breath of Life, though at the cost of many wearisome hours. If the General Practitioner does not appreciate, as he sure may not, this disinterested public service, he may go hang."

Then would follow your statement of the aims and scope of the volume, acknowledgments, etc. *Signed*, F. C. Wood.

This would be my conception of a truthful, proper preface with punch. Anyhow, I feel quite inspired to start out on a course of reading in the handsome, stately volume. In the meantime, I am both gratefully and sincerely yours.

This letter to Dr. Kidder, of the Peabody Museum at Harvard University, demonstrates the same generous pleasure in the work of younger men.

From Dr. Prudden to Dr. Kidder

November 24, 1919.

I have just finished reading your fascinating and admirable volume on the Arizona Explorations. You have opened up so many interesting things and opened out so many suggestive and alluring themes and have done both so well that you and Guernsey are sure enviable and congratulatable.

I was bragging to Mr. Guernsey when I was in Cambridge early in October—where, thanks to you all, I had such a good time—that *I* had put into print the first public announcement of the Basket Maker. He did not seem, I thought, to be as much impressed at this weird announcement as a Sole Survivor might be. So, inspired very likely by lingering pique, I dug up a couple of old Harper's Magazines the other day and am sending them on, one to you and one to him, as the most legitimate and, may I say worthy, heirs apparent or residuary legatees of the Elder Brother.

I consider this Harper's article to be a model of indirection and verbosity, and your facts make mockery of some of the choicest of its jaunty conjectures. But it was a voice in the wilderness calling for attention to this Old Party, who seemed then to have no friends at the court of the Anthropological Mighty.

I have always thought that when a man begins to exhume his old publications and to palm them off on helpless inheritors of a new day, he goes far to suggest, if not to proclaim, approaching or actual dotage. But I risk your concurrence in my notion about old reprints for the sake of exploiting an historic trifle and to exemplify, if not exonerate, magazine science, which, though often rambling and awry, sometimes does herald the real stuff.

And this, enclosing check for one hundred dollars, in reply to the information from Dr. Kidder that the Harvard Exploration Fund suffered while the Harvard Endowment Fund was being raised.

From Dr. Prudden to Dr. Kidder

May 17, 1920.

Sure thing! If you hadn't given me the privilege of being one of the battalion of rescue, I should have felt like punching your head.

Here's wishing well to you, to Guernsey, and to the shades of the Elder Brothers.

His attitude toward many opportunities for continued work is expressed in this reply to a request to become a consultant to the new St. Bartholomew Hospital in 1919.

From Dr. Prudden to the St. Bartholomew Hospital

I feel flattered that you should ask me to be on the consulting board of the new hospital, but I am getting released from all the consulting positions which I have held so as to leave the way clear for younger men. I have the feeling that it would be rather a handicap for a forward-looking enterprise like yours to take on an old chap that brags that he is getting free from all such alliances.

Besides, while enjoying life, I am conscious of sailing fairly close to the wind, and should, I am sure, not be able to be really helpful. So if you don't mind perhaps I had better not go on the Board. I thank you for the kindly proposal.

From Dr. Knapp to Dr. Prudden

April 6, 1920.

I do not know whether you still like to be troubled about matters pathological, but I would be very much obliged if you will tell me where I can find some information on the following clinical fact: Tuberculosis of the retina is frequently a process which starts from the lymph sheaths of the veins. Is there any anatomical explanation for this localization?

From Dr. Prudden to Dr. Knapp

I am mighty sorry not to be able to throw any light on your problems; but I forgot all about tuberculosis and the retina and what the sheaths of veins are when I slipped out of the bunch at the P. and S., and have no helpful recollection.

Now if you wanted to know about the high line trail from Hell's Gulch to Blue Pyramid in Arizona or how the cliff-dweller shapes a spear, or how they run a research institution in New York, I could fill you full. As it is, I can only be regretful, in this instance, that I switched off from pathology.

From Dr. Prudden to Dr. G. L. Rohdenburg, secretary of the Pathological Society, who had written him that the Society considered his experience too valuable to permit the acceptance of his resignation presented at the annual meeting.

1922.

I appreciate the generous and kindly action of the Pathological Society in suggesting that my resignation as Trustee be reconsidered. I am quite confident that my services as a Trustee are not necessary on so competent a body, but as your gracious note would permit me to linger on in the decorative guise of an "old guard," it will give me pleasure to do so.

I have worked a good deal in my time on one or another medical board, and have found them mostly harmless, and, with some tact, suppressable.

From Dr. Prudden to Dr. J. G. Gehring

March 9, 1914.

I have been down to Washington to see the anthropologic big-wigs about some of the results of my last summer's diggings. They were uncommon civil, considering I am only a poacher on their natural preserves. On my return I find your excellent, attractive, and hearty letter, with its alluring suggestion of a visit to Bethel. But I must stick to my job now for a while, and many things crowd the path; so it cannot be now. In fact, I shall soon be on the wing and back here only now and then until next October.

I shall be eager to see the book when the time comes. I have put a dollar in the savings bank so that the new organization of the Bethel League may not find me unprepared.

The typhoid vaccination is a good stunt. All the genuinely up-to-date folks are doing it in faith and calm.

Remembrances to Mrs. Gehring.

From Dr. Prudden to Dr. J. G. Gehring

January 20, 1919.

I am assuming that by this time you have sallied forth from the safe and sane environment of Bethel and are cavorting more or less gaily across the continent.

I have taken up with Dr. Cole, head of our hospital and the responsible originator of the prophylactic measures against pneumonia which you referred to, the feasibility of sending on material for use as you suggest. I suppose the reference is rather to the pneumonia vaccine, which has been tried out on a considerable scale with some groups of soldiers in camp under conditions which may be feasible and desirable as a test. But Dr. Cole does not think the matter has gone far enough so that it would be desirable to try the experiment on individuals under the ordinary conditions of life and, I may add, least of all on such distinguished persons as would in part at least compose the group which you propose to have prophylacticated. Dr. Cole suggests that the best prophylaxis in the case of your party would be maintenance of good general health and the avoidance of crowds and stuffy places where unsanitary people are liable to be disbursing pneumonia germs.

So there is the advice from headquarters, which we are supposed to regard as the best. If we had a practicable prophylactic you should have it, but we must all abide a little further experimentation.

I am sorry that you are undertaking to travel about without a sipapu,[1] but I do not doubt that you may have a good time without one. I left two in practically good condition out on the high Mesas in southeastern Utah, but they are some ninety miles from any reasonable place, and may be considerably weathered by this time. But keep your eyes open. You might be in luck. If you go to Santa Fé on the way home, ask Professor Hewitt, head of the museum there, what they are and how they may be come by.

Here's again wishing you luck, and with regards to Mrs. Gehring.

From Dr. Prudden to Mr. Goulding

January 30, 1919.

I had been figuring that you might be dropping in almost any time now with all your scars and tales of war, but am glad to have a letter if we can't have you, although it is more than a month old.

It is too bad that you should not have had even a Red Cross box for Christmas, but I suppose you have forgotten all about the indignity of that now. It seems to be the universal plaint now-a-days from all the fellows over there that they want to get home. It looks to us as if there would be some policing to be done by somebody and perhaps some more punishing if the wily Hun does not get a more chastened spirit in him.

We are all here trying to pretend that peace time has come again, but there doesn't seem to be much difference as yet in the things we do or eat or wear. We talk about the Peace Conference more or less; half the newspapers extol Mr. Wilson and brag of his diplomatic victories over his colleagues, and the other half belittle and bedraggle him. I have failed to see a sign of honest endeavor in the United States Congress thus far, and it looks as if their legislation for revenue and railroad control and the like would perhaps do credit to a bunch of bummers. The Republicans are at the old game of trying to get in and the Democrats to stay in, but neither of them seem to apprehend much that the overtaxed worm may turn.

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[1] Dr. Gehring had facetiously inquired how he could acquire that unknown entity which Dr. Prudden had referred to so often in his archæological writings as a "sipapu," which was a circular hole in the floor, by which spirits might enter a dwelling.

I am enclosing, as perhaps showing better than I otherwise might, the things we are thinking about—a few clippings grave and gay.

Politics is a little at sea in Mr. Wilson's absence, but the Republicans are sticking out their tongues at the Democrats and getting sympathetic responses. See Exhibit A. from Pinchot. But the thing which commands our keenest interest and inspires our bitterest regret is that we are to lose our booze, and that all because a small minority of us tell the most of us that we must. Our reaction to this is made articulate in Exhibits B, C, D, E and F. The worst of it is that it seems to our frightened imagination that they may get after tobacco next. See Exhibit X. Then where will you be, with your rank pipes and your disreputable cheroots? Chewing-gum is likely to come after that, and so on. But I have stowed away a small remnant of that with which, whatever betides, we can celebrate your safe return.

From Dr. Prudden to Dr. Gehring

March 20, 1919.

It was mighty good-natured of you to rob your vacation of time enough to send the fascinating letter about your experiences at the Canyon and elsewhere. It had just the sort of stuff I am always eager to get hold of. I am so glad you wrote Lumsden, partly because you liked him, as I am sure he liked you, and partly because I'm quite set up to have old man Lumsden[2] know that I have friends who can ride across the continent in a private car. You see he knows me only as a bloke who hitches up his chaps with a rope, smokes bad tobacco, and sleeps on the ground. Now he'll begin to suspect that I'm "some punkins." I shall write to him, thanking him for the clipping about old man Hance and for the Buffalo Jones picture.

I am sorry you had a sore throat at the Canyon and couldn't share in the dance with my dusky pals. But you will go out again—we all do—and then you will get in at the snake dance and see something, even perhaps a Si-papu.

Don't let them sell you any real estate. You're needed permanently in Maine.

But I'm all-fired busy this morning, and can't chat with you any longer this time.

From Dr. Prudden to Mr. Lumsden

March 21, 1919.

I was mightily pleased to get in touch with you again through Dr. Gehring, who writes to me most enthusiastically about the acquaintance which he struck up with you, and how much it contributed to the pleasure of their visit to have known you. When I told him to look you up, I wasn't at all certain whether, being an enterprising individual, you might have abandoned the old locomotive and be running an airplane between Williams and the Canyon. Perhaps you will be doing it yet.

Dr. Gehring is one of our big doctors here in the East, and I am glad he had so good a time at the Canyon. Also, I am fascinated by the Buffalo Jones picture, which Dr. Gehring sent on from you. I don't know Jones very well, though I have met him, and this seems to be rather a characteristic pose.

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[2] Lumsden is the engineer of the train that runs from Williams to the El Tovar Hotel.

I fancy you would not easily guess who of our old Canyon crowd has been staying with me for a few days, but it is Jim Goulding, who has been through the War as a first lieutenant in the Artillery and who has had some hot times—shelled, and bombed, and treated in all sorts of uncouth ways—but he has come through all right, and as soon as they have their parade here in New York next week, he will pike out for the West where, as you may know, he is a landed proprietor, and raises almonds. He would, as I should, like very much to have you pull us up to the Canyon Rim again, and perhaps it may come about sometime.

I don't see from the photographs which Dr. Gehring sent me that you have grown either fat or lean.

The following correspondence explains itself.

From Maxine Elliott to Dr. Prudden

Berkeley, Calif.
November 6, 1917.

Something has been puzzling me, and you are the one who can satisfy my curiosity.

Do you know of anything more annoying than not to be able to understand a joke?

I read your book "On the Great American Plateau" with a great deal of pleasure until I came to this passage concerning the cleanliness of the "cliff-dwellers." You said that life had more pressing uses for water, than for bathing purposes, but that nature was a good substitute. However, the part that was "over my head" was your statement that "use can make sweet the peaches' shady side."

Won't you please explain what this means as I am certainly very anxious to know?

From Dr. Prudden to Maxine Elliott

November 20, 1917.

As one is glad to do who has so often shared with his fellows on our side of the footlights the gracious presence and genial performances of Maxine Elliott, I hasten to respond to your courteous bidding that I should unfold the meaning of a borrowed phrase in my little book on the Great American Plateau.

Your query has given me occasion for the doubtful pleasure of reading over the paragraph which has so unhandsomely disturbed your serenity. And frankly I do not know more exactly than it says what is meant by "use can make sweet the peaches' shady side"—"that only by reflection tastes the sun" is the rest of it, which I did not quote. But you see I don't really have to know because I did not make but only borrowed the words from James Russell Lowell, and he, God rest his soul, is dead and cannot tell us.

What I meant to have it mean, I conjecture, was something like this. Holding as I did a momentary brief for the ancient cliff-dweller, and eager to convince myself and others that though not scrumptious, he was after all a clever, human and likable old boy, and being forced by the relentless stress of Truth to confess that he was dirty; I clutched at this half-remembered phrase from "The Cathedral" in the hope that my readers—if I should have any—might concede that if the bloomless sides of peaches could be a little more than tolerable when you got used to them—and we have to take Lowell's word for that—why even this dirty old sun-baked vagabond, scrambling and pottering about over the cliffs, might be a decent enough chap when once you got used to him, especially as the ardent sun and the dry salubrious air of the great Southwest land made him willynilly safe, gently converting his crude ways of life from sanitary risks into mere aesthetic impediments.

That is all my case, and if I cannot escape the implication of unlucidity, I must throw myself upon the mercy of the court. If we could only reach Lowell.

This group of letters written at Jackson, New Hampshire, shows that there were no vacation intervals of indifference to the details of Institute matters.

From Dr. Prudden to Mr. Henry James, Jr., Business Manager of the Rockefeller Institute at that time

May 26, 1916.

I am gratified to learn that my proxy is kept to his job and pleased to say that his official performance thus far meets with my approval.

The "popples" were scarcely out a week ago, and Mt. Washington was a clear white down to the top of Tuckerman's ravine. But now the birches and maples are out; violets, dandelions, strawberries and lots of other small fry are just "bustin' theyselves" to keep up with the times.

Meantime, I loll upon the putting greens leisurely uprooting stray uncouth weeds, and pity you slaves.

But I "callate" to get down and in harness for the Executive Committee meeting.

From Dr. Prudden to Mr. Edric B. Smith, Business Manager later of the Rockefeller Institute

July 21, 1920.

The report on the north plot is interesting and covers about the ground which we have already been over with similar conclusions. The training school part of it and various details it would not, I suppose, be necessary to commit the Institute to for tax adjustment purposes. It seems to be clear that a recreation place for youngsters and an open air space for mothers and babies are desirable and could be arranged on this plot.

Very careful consideration should be given in arranging details to the minimizing of noise and dust in the immediate vicinity of the laboratory. As you know, I am heartily in favor of parkifying the place a bit and not merely duplicating one of the desolate and dirty city playgrounds. I wish, if Mr. Murphy had time and were so disposed, you could conduct him in a taxi—it could be done in an hour—first to the DeWitt Clinton Park, which we so hastily visited with Dr. Flexner, and then to St. Gabriels, 36th & Second Avenue, and to Carl Shurtz Park at 86th Street, I think, and the East River, in both of which there is a suggestion of getting rid of the desert aspects of DeWitt Clinton and most of the others.

From Dr. Prudden to Mr. Smith

September 6, 1921.

In the furnishing of the staff lounge, it seems to me that the most important thing is to have a lot of comfortable chairs without much regard to the maintenance of any particular style or to the securing of uniformity.

What you write about the Jemison place is interesting, and it is clear enough to me that we should make some move to provide more for the staff, who may need quarters.

Yes, this is the ginko tree which I have been talking about, and it seems perfectly adapted for some at least of our needs on the playground. I would get Mr. Haynes' opinion about its adaptability and the chances of getting some large enough to be of some service next season up on the bluff.

Does the machinery of your institution suffice to answer the question of the enclosed?

If so, please let me know. Miss Trask[3] may know about this in the plentitute and universality of her knowledge or resources.

P.S. The whole country hereabouts has gone woefully dry, and domestic water supplies from most springs have petered out. But I sit smiling at my hydraulic ram, which I have long been fussing over, which clicks away and saves us from forced emigration.

As an indication of the equanimity with which he met the transference from the congenial life of Treetops to a Boston hospital that last summer, two brief extracts from the frequent letters with which he quieted the uneasiness of his sister are allowable.

August 24, 1923.

Greetings to the bunch at Treetops, which, I hope, has survived the cold spell, and, I hear, was not blown off the piazza. All goes well here—getting up on the roof for some part of an hour nowadays.

We had a marshmallow toast for the night nurses on our floor last midnight. I set up the marshmallows, and the cook did the rest when they had their regular midnight supper. I told them the entertainment here was to keep alive the traditions of Treetops while I was away. The night nurses have been rather human on this floor, dropping in to say "how-dye-do" as they muster for duty in the evening at my door at the end of the corridor.

August, 28.

I am sorry to think of the party dissolving at Treetops, and hope you are not too much spent with entertaining exacting, if diverting, youth. Today sees me on my first journey afoot—a voyage autour de ma chambre of six steps. It is a bit lacking in dramatic force because I could go ten times the length as well, but I am playing the game to the letter, and this seems to be the point marked for achievement at the end of three weeks, and I really have enough to eat, and am reconciled to many deprivations never whispered at your table. The new set of books came from you. I have plenty of reading, much more than eyes to do it with. Angela just dropped in with a pear and a tomato. I shall hope to see Sam when she comes through.

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[3] Librarian of Rockefeller Institute.

APPRECIATIONS

Dr. Flexner—Mr. J. D. Rockefeller, Jr.—Miss Trask—Miss Thompson—Dr. Walter James—International Health Board —Public Health Council—Health News—Dr. Nicholl—Dr. Gehring—Dr. Soper—Dr. Doty.

APPRECIATIVE estimates were naturally called forth by Dr. Prudden's death, some of which have been used in earlier chapters to add significance to special phases of his life. There remain, however, personal tributes, resolutions, and parts of letters that either emphasize what others have said or put in different light those aspects of his character that give it a distinctive and lasting influence. Among these are further words from Dr. Flexner, taken from the article previously quoted.[1]

Dr. Prudden possessed a natural habit remarkably straightforward and elevated. It is doubtful whether many persons casually penetrated an exterior superficially somewhat austere. But to the number, by no means small, of persons admitted into the inner circle of his personality, he exhibited a nature peculiarly sympathetic, sensitive, and simple and a heart of rare warmth and richness. His scientific ideals were high, sometimes, it seemed, almost unapproachably high. And yet he produced work of his own, through his pupils and by stimulation from many others; and no one put a higher value on something real achieved than did Dr. Prudden.

The large range of his intellectual activities can be gleaned most easily from the list of his published papers and books, which, from 1879 to 1914, cover about one hundred major titles. The greater number of the papers and books relate naturally to his special field of inquiry; namely, pathology and bacteriology, in the widest sense. The articles and books on American ethnology form a thing apart, and show how readily Prudden might have led in archæology, as he did in pathology. His pen was a facile instrument, which he could turn at will to the description of detailed and abstruse phenomena or the revealing of fascinating and romantic happenings in the life of the bacteria, the conquest of disease, the past of American aborigines, or indeed any theme which engaged his interest and his thought. His delightful booklets, *The Story of the Bacteria* and *Dust and Its Dangers,* were more than messengers of light to the medical profession; they were written in such simple and delightful style that they were read with the absorption of romance by many lay persons, and contributed a large share to that popularization of authentic knowledge upon which the modern practice of sanitation has come to be built. But as with every scientific man, the most enduring productions are the results of his own efforts to extend the bounds of knowledge; and in that endeavor, Dr. Prudden himself labored through many years, and inspired the labors of many others. There stand to his credit and that of his pupils many conspicuous pieces of finished work.

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[1] Simon Flexner, "Biographical Sketch of Dr. Prudden," *Science,* November 7, 1924.

Extracts from letters written to Miss Prudden

From Mr. John D. Rockefeller, Jr., to Miss Prudden

The service which Dr. Prudden has rendered to the Rockefeller Institute during these many years of his connection with it, it is impossible to over-estimate. No one on the Board of Medical Directors has given more careful, constant, thoughtful, brooding attention to the interests of the Institute, large and small, than he. His associates and the Trustees have long relied upon him in a peculiar way, and at the same time have always leaned with confidence upon his judgment. While we mourn profoundly the loss of this good man, we rejoice in the magnificent service which he has rendered during the years of his long and useful life, and are grateful that the end came so easily and so beautifully.

From Dr. P. A. T. Levene, of the Scientific Staff of the Rockefeller Institute, to Miss Prudden

For twenty-eight years I had the good fortune to enjoy your brother's friendship. He came to the front when men of his type were so much needed in this country. High standards of ethics, high standards of science, high standards in teaching, high standards of friendship are what he stood for. It is easier to lock oneself up in a laboratory and to devote oneself to its problems than it is to carry through life and to inculcate into others high standards. This your brother successfully accomplished, and for this all those who came in personal contact with him loved and admired him.

From Miss L. M. D. Trask, Librarian of the Rockefeller Institute, to Miss Prudden

His personal contact was so precious a thing one scarcely knows how to put into words the feeling of love and loyalty that everyone at the Institute shared for Dr. Prudden. He was preëminently one of us, seeming to belong to the Institute in the way we did and to be working with us day by day, a constant inspiration and a never-failing support.

It was always a marvel how intimately he was aware of the details of each division, and how deeply concerned for the welfare of the personnel. Periodically, as economic conditions changed with the war, and later, he would ask for a budget of proper living expenses for women in New York that he might the better study the salary question. And it was characteristic of his nature that the budget should include an item of "savings" and one for "charities" in order that the worthier impulses of the employees be not strangled by too close a grind.

How he found time to know us all is hard to say, but each one became an individual to him, for whom he had always a word, a nod, or a smile; and so vital is his presence still that it seems as if we must see him any day coming down the corridor, with a wave of his hand as he turns the stairs toward his own office. For some of us it will always be so, for he came into our lives to stay.

From Miss Mary B. Thompson, Hospital of the Rockefeller Institute, to Dr. Flexner

Our own sorrow is very great with the loss of so good and true a friend as Dr. Prudden. His helpful advice, his thorough understanding, and his friendship have been our inspiration many times when our courage was at low ebb. We shall miss him more and more, but his memory will ever be to us all a guide post to whatever is truest and best and most worthy in life.

From Dr. Walter James to Dr. Simon Flexner

April, 1924.

I feel such a real sorrow at Prudden's death that I have the impulse to write a letter of sympathy to some member of his family, if I only knew them, or to who there is for me to write to, and therefore as I have for many years thought of Prudden as being a very close and much beloved member of your Institute family, I want to write just a line to you to tell you how much I deeply sympathize with you all in the loss of him. I was with him at the

College for so many years and had come so to love his charming personality that I can easily realize what it must mean to all of you good people to part with him. His sweet disposition and equanimity, his unrivalled power of throwing himself into things and becoming part of them, and his judgment and his acumen must have made him very useful to you.

From minute adopted by International Health Board of the Rockefeller Foundation, May 20, 1924

But it is as a pathologist and bacteriologist and, especially in the last two decades of his professional career, as sanitarian, that his services to science are to be reckoned. Dr. Prudden's interest in the public health was an ever-growing passion. He served the City, then the State of New York, and incidentally the Western World. His knowledge of the manner of causation and the means of prevention of disease was profound, and his temperament, wisdom, and desire to serve made him an incomparable counsellor. His facile and ready pen was a powerful instrument in making knowledge accessible and assimilable to students, physicians, and laity. As teacher, investigator, and writer Dr. Prudden exerted an influence on his period the value of which will become increasingly apparent. It may also be said of him that he had the merit of simplicity, the gift of friendship, and the devotion of a public benefactor.

Signed, Simon Flexner,
William H. Welch,
Frederick F. Russell.

From resolutions adopted by the Public Health Council of the State of New York, May, 1924

Resolved, That in the death of Doctor T. Mitchell Prudden, the Public Health Council of the State of New

York has lost a member whose valuable, devoted, and enlightened service has contributed incalculably to the counsels and acts of the Council. The wide knowledge of sanitary matters possessed by Dr. Prudden, and the deep interest which he always displayed in advancing the cause of the public health, as well as the unusual literary gifts, which he applied to the dissemination of information on public health questions, combined to mark Dr. Prudden's services to the State as of remarkable breadth and significance.

From "Health News," published by the New York State Department of Health, April 21, 1924

Handicapped by increasing ill health, largely owing to a serious cardiac involvement, his active work has of late been directed toward useful service on the Board of the Rockefeller Institute and the Public Health Council of the State where his counsel and advice have been of incalculable value. Tuesday morning, April 8, he attended the meeting of the Public Health Council; Wednesday morning he was at the Institute, his keen intellect as alert and active as ever it was. That night he died suddenly from coronary thrombosis.

There is scarcely a city or district of the State that does not number among its practitioners of medicine some of the students of Dr. Prudden. Beloved by all those whose privilege it was to come into personal contact with him, New York State loses a wise counsellor, whose keen, critical judgments and broad, sympathetic point of view have so largely, and for so long a time, been freely devoted to its best interests.

A Tribute

By the death of Dr. T. Mitchell Prudden, member of the Public Health Council since its inception in 1914, the

Commissioner of Health and his entire staff have lost an advisor and friend whose counsel and guidance were as generously given as they were frequently asked.

A man of deep learning and unerring judgment, he endeared himself to all who came in contact with his inspiring love of truth and the unswerving sincerity of his purpose. His rare qualities as a teacher made him beloved by a host of his former students among whom, in presenting this token of our sorrow and affection, we are proud to be numbered.

MATTHIAS NICOLL, JR., M. D.
Commissioner of Health

AUGUSTUS B. WADSWORTH, M. D.
Director of Laboratories

From Matthias Nicoll, Jr., to Miss Prudden

April, 1924.

I need not say what a shock your brother's death was to me, especially as I had seen him the day previously at the Council meeting and thought that he was looking exceedingly well. There was no man for whom I had greater love and respect than for Dr. Prudden. He was my teacher at the College of Physicians and Surgeons, at which time, however, I learned only to respect him as a great teacher. It was not until many years later that I came to regard him as a valued friend and adviser. We, in the State Department of Health shall not be able to replace the loss caused by his death. My predecessor, Dr. Biggs, relied very greatly on his judgment, and when I became Commissioner, I regarded the responsibility with very much less concern because of the knowledge that Dr. Prudden and Dr. Flexner would be at hand to advise me.

From Dr. J. G. Gehring to Miss Prudden

May, 1924.

I would like you to know how proud and honored I have felt myself in the friendship of your distinguished brother. Because he was my friend I have thought better of myself! He represented to me the very finest type of manhood—he was to me the type of the "Brahmin Caste," the best that New England could produce. His knowledge was profound and only equalled by his modesty and sensitive shrinking from all pretense. One felt himself in the presence of truth, of simplicity and of great kindliness.

I was always touched by the way in which he referred to the aboriginal people of the Southwest, in whom he took such a vivid interest—a "simple and kindly folk" he called them! His references to them held for me a peculiar charm. It was but the expression of the innate good will that he felt for all mankind.

From Dr. George A. Soper, Director of the American Society for the Control of Cancer

I knew Dr. Prudden for thirty years, but he was not aware that our acquaintance covered so long a period. I owe my introduction to him to a severe attack of influenza. I was an engineering student at the Rensselaer Polytechnic Institute at Troy, and was confined to my room with what was then looked upon as a new and fashionable disease called "la grippe." The newspapers said it had recently been imported, and there was a great deal of interest everywhere in regard to it. So far very few persons had any knowledge of the symptoms beyond what the cables from Europe had announced. I seem to have had them all.

During my convalescence, I obtained Sternberg's Bacteriology and Prudden's Dust. I had time to examine them as they should have been examined—I read them carefully and appreciatively. This was a turning point in my career.

A whole new world opened before me. I became fascinated with the realm of study which lay among the microbic causes of disease. Prudden's breadth of view, discriminating judgment, and fascinating style of expression took strong hold upon me. The lucidity and adequacy of his description made the subject of dust one of the most engaging conceivable. I obtained everything I could find from his pen. That is how I became acquainted with him long before he knew me.

It was largely due to Dr. Prudden's unconscious influence that I took a special course of instruction at the Albany Medical School in bacteriology and pathology. It was because of his connection with the College of Physicians and Surgeons that I took the post-graduate work at Columbia which brought me my M.A. and Ph.D. degrees. I had had some years of experience in sanitary engineering after I graduated from the Polytechnic, when it seemed desirable that I should carry on certain researches which could only be pursued at a university with adequate laboratory and library resources. And above all, I wanted to get in personal touch with some scientists with whose work I had become familiar. I wanted to feel more of the influence of Prudden.

Dr. Prudden cordially offered me every facility possible in the Department of Bacteriology in West 59th Street. He said he was much interested in the subjects which occupied my attention. He recommended a post-graduate course in bacteriology, and made many helpful suggestions as to my researches. I was especially occupied with the effect of temperature on the growth of bacteria and the action of various disinfectants which might be employed in water purification.

For nearly twenty-five years I knew Dr. Prudden as a personal friend and intimate professional advisor. He was always ready to listen to my schemes and to counsel with me in the wise and searching way which characterized him. I felt his counsel was always free from personal bias. It was well-informed. It looked far into the future, and saw not only the immediate consequences but the ultimate results. Sometimes he in turn told me of his hopes and plans and difficulties. It is not generally known, perhaps, how helpful he was in shaping projects which have been carried out in the direction of health work and for which others have been given credit.

Dr. Prudden's influence as a scientist, deeply interested in the conquest of disease and the promotion of that positive condition of well-being which we commonly call health, was much greater than is ordinarily supposed. He was not as widely known as some in this field for the reason that he was too modest to force his personality into the foreground, and had a positive distaste for appearing to do so.

However one may regard the term, Prudden was a reformer. He was a reformer in the sense of wanting to put definite, concrete, correct knowledge in the place of the empty theory and unsupported assumption which so often pass for learning. And he was a reformer in the sense of being a pioneer in the employment of new and serviceable methods for the solution of previously misunderstood problems affecting human welfare. Once he imported from Scotland an exceedingly delicate instrument, called the koniscope, for the accurate determination of the ultimate number of dust particles in the atmosphere, and loaned it to me for some months to help in some extensive ventilation experiments which I was making.

At a time when he was very ill at the Presbyterian Hospital, I felt I needed his counsel before taking up what promised to be a long and arduous task. I had some doubts as to my fitness for it. I was not sure that the existing state of scientific knowledge warranted the nation-wide campaign of education required. I needed, as I often had on previous occasions, Prudden's sage advice. During the interview which we had, I happened to remark that the causation of a certain disease appeared inscrutable. Dr. Prudden was quick to object to the word. If the causation had thus far eluded research, he said, there was so much more reason for redoubling our efforts to find it. There were two branches to the subject which we were talking about, and in each my experience in other fields had given me qualifications. One was epidemiological research. The epidemiology had not yet been worked out in a scientific manner. The other field was in the education of the public and the medical profession upon the practical side of the existing knowledge. I objected that I had never been a teacher, upon which Dr. Prudden remarked, a little impatiently, that I had actually been a teacher throughout my professional career. It was because he advised me to do so that I took up the work upon which I am now engaged.

It was because he advised me not to do so that I never sought a medical degree. It was because he advised me to do so that I offered my services to the flood sufferers at Galveston after the disastrous storm and at a time when wide-spread epidemics threatened to destroy what remained of that stricken community. And it was because he thought well of them that I devoted myself to various other undertakings.

Not the least valued part of Dr. Prudden's influence was his broad culture. It was, and is, a genuine pleasure to read whatever he wrote. He told me on one occasion that it was a mistake to write upon scientific subjects in a language suited only to persons who might be presumed to be masters of the subject. It seems to me that anyone who read Dr. Prudden's words on any subject, and he wrote on many, would want to become a master of English such as he was.

The strongest bond of friendship between us was a human one. I learned to have an affectionate regard for Dr. Prudden such as I have felt for few men. Perhaps I could explain it and perhaps I could not. I have no disposition to use the methods of science in analyzing it.

Dr. Prudden has been, and will be, a factor in my life which I am grateful to have an opportunity to acknowledge.

From Dr. A. H. Doty to Miss Prudden

April, 1925.

Dr. Prudden was a member of the New York Quarantine Station Consulting Board for a number of years during my term of service as Health Officer of the Port of New York. At no time during the history of this Department were so many urgent problems dealt with relating to public health protection. The Spanish War, which occurred during this period, added much to the danger from yellow fever, as direct communication with Cuba, a dangerous centre of infection, was greatly increased by returning soldiers etc. Besides, at this time typhus fever and bubonic plague were active in various sections of the world which were in more or less direct communication with the United States through the medium of incoming vessels, and the examination and treatment of those arriving on these vessels as a matter of public protection without unnecessary annoyance and hardship to commerce and the traveling public was a problem not easily dealt with. Dr. Prudden's clear reasoning and advice at these critical times were of the greatest value. He had the courage of his convictions, which added strength and importance to his expressed opinions in all matters dealing with quarantine regulations as well as other questions relating to medical science, and all knew Dr. Prudden as a most loyal friend.

APPENDIX

List of Organizations to which Dr. Prudden Belonged—Letters Concerning Federal Action in Tuberculosis Deportations—Letter to Mr. Low about Institute of Hygiene—Letter to Mr. Low about Appointment of Dr. Biggs—Bibliography.

LIST OF ORGANIZATIONS WITH WHICH DR. PRUDDEN WAS CONNECTED

The New York Pathological Society.
The Practitioners' Society of New York.
Connecticut State Medical Society.
Alumni Association of the College of Physicians and Surgeons of New York.
Public Health Council of the New York State Department of Health.
International Health Board of the Rockefeller Foundation.
Board of Scientific Directors of the Rockefeller Institute for Medical Research.
American Academy of Arts and Sciences.
National Academy of Science.
Association of American Physicians.
New York Academy of Medicine.
The American Association of Pathologists and Bacteriologists.
The Society of American Bacteriologists.
American Anthropological Association.
New York Historical Society.
American Geographical Society.
The Archæological Institute of America.
The Landmarks Club.
The Sequoia League.
University Club.
New York Athletic Club.
Century Club.

Dr. A. B. Wadsworth's Selections from Dr. Prudden's Writings

A glance at the bibliography of Dr. Prudden shows the wide range of his interests and how largely public health figured through all the active years of his scientific career. Among his unpublished notes, reports, and correspondence is a large store of similar material from which it is only possible to select a few of the more significant examples. A characteristic public health point of view in regard to federal action in excluding tuberculous individuals from visiting this country is to be found in the letters to an attorney, whose client was to be deported, and to Dr. Knopf.

From Dr. Prudden to Mr. Francis Tracy Tobin

November 30, 1901.

Your letter of the 27th inst. asking me to join you at the United States Circuit Court in Brooklyn, on Friday, November 29th, has been delayed owing to an incorrect address.

I regret that I could not have the opportunity to express my opinion bearing upon what I understand to be the action of the United States authorities in the case of Mr. Boden. I believe the attitude of the Government in this matter to be indefensible on scientific grounds and entirely unnecessary in the interests of the public health.

From Dr. Prudden to Dr. S. A. Knopf

February 5, 1902.

I regret that I cannot be present at the meeting of the Academy of Medicine on Thursday evening, and so shall not be able to speak as I should like to do in favor of the resolutions concerning the recent ruling of the Treasury Department on tuberculosis.

I think that the resolutions admirably cover the ground of a dignified and earnest protest. I almost wish that at the end of the second resolution the word "American" were stricken out, since it seems to me that possibly "simple justice" is more just than "American justice" sometimes is. Also, at the beginning of the third resolution, I query whether the Academy can uphold a fact, since facts stand for themselves. The Academy can maintain its conviction of the communicability etc. However, these are only subsidiary matters.

It is indeed discouraging that the advice upon which the Treasury Department of the United States appears to have acted in this matter, in this period of general enlightenment regarding infectious diseases in general and tuberculosis in particular, should ignore the revelations of two decades of beneficent research, and imply so crude a conception of the solution which modern science has to offer to this serious problem of preventive medicine.

Resolutions of New York Academy of Medicine

Whereas, The Treasury Department of the United States, upon recommendation of the Surgeon-General of the Marine Hospital Service, has recently decided to classify pulmonary tuberculosis with dangerous contagious diseases, be it

Resolved, That the New York Academy of Medicine deeply deplores this decision, which is not based either on clinical experience or on scientific experiments.

Resolved, That the Academy considers the exclusion of non-pauper tuberculous immigrants and consumptive aliens visiting our shores unwise, inhumane, and contrary to the dictates of justice.

Be it further *Resolved*, That, while the Academy is convinced of the communicability of tuberculosis and urges all possible precautions against the spread of the disease occasioned by sputum and tuberculous food, the Academy is opposed to all measures by which needless hardship is imposed upon the consumptive individual, his family, and his physician.

Perhaps the most striking evidence of his active interest in everything pertaining to public health is to be found in his correspondence, dating back to 1900, with Seth Low and others regarding an institute or museum of hygiene. In 1914, the ideas here outlined were further developed and formulated in a report which he drew up for the Board of Scientific Directors of the Rockefeller Institute to present to the Trustees. In this report he set forth in a clear, comprehensive manner the possibilities of public health service that might be achieved by extending the scope of the work of the Institute to include research in the applied sciences of preventive medicine. This institute or museum of hygiene doubtless represented what Dr. Prudden considered to be an attainable culmination of public service.[1]

From Seth Low to Dr. Prudden

August 8, 1900.

I am interested to ask you the following questions:

(1) Would it be a matter of great advantage to medical science, and through it to humanity, if an institute on the same general lines as the Pasteur Institute in Paris were to be established in America and properly endowed?

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[1] This correspondence was a year before he became a Director in the Rockefeller Institute.

(2) If such an institute were to be established in the United States, where should it be located? That is to say, in what place would it be likely to accomplish the most good and most completely justify its foundation?

(3) Should such an institute, in order to accomplish the most good, be a separate foundation, or should it be affiliated with a hospital or with a medical school?

(4) What sort of results might be reasonably expected to follow the foundation of such an institute, properly endowed and equipped?

(5) What do you think should be the working force of such an establishment, and what endowment would it require in order to be as useful as possible?

I shall be greatly obliged if, in replying to these questions, you will give briefly the reasons in each case upon which your opinions are based. I may add that this is not an idle inquiry, although I cannot say, on the other hand, that it will certainly lead to anything. The questions, however, deserve your most careful consideration. There is no immediate hurry for a reply.

From Dr. Prudden to Seth Low

September 19, 1900.

I have given careful thought to the questions which you asked me in your letter of August eighth, regarding the desirability of the establishment in America of an institute similar in character to the Pasteur Institute in Paris.

The advancement of medical science and the benefit to humanity which the founding and adequate endowment of such an institution in this country would secure can in my opinion hardly be overrated. I do not know of any other means by which with so much certainty individual suffering and misery could be relieved and prevented and research be fostered along lines involving the highest general welfare.

Such an institute, in which the work of research in medicine, not alone along the line of the infectious diseases to which the Pasteur Institute was, and is, especially devoted but in allied fields for which there is now no adequate provision, should be closely linked to a far reaching system of public education in sanitation and hygiene, might appropriately be called an Institute of Hygiene and Medical Research.

Such an institute should in my opinion be located in or near a large city, for here the subjects for study and the material for investigation are more abundantly at hand, the call for aid more urgent, and the general influence for good more effective.

The institute should also in my opinion not be on an altogether separate foundation but should be joined to some university which has a well-appointed and wisely-conducted medical department. This I consider most important, because the medical science of today is so closely bound to other phases of science, physical and biological, that great help and constant stimulus are to be found in the association and a certain community of interest which the university affiliation assures. Moreover, a good university connection is an important steadying influence in such a foundation and lends weight and efficiency and authority to the result of its research, while it can greatly aid in the attainment of its direct practical aims.

The results which such an institute might reasonably be expected to yield are manifold. First, the advancement of knowledge in many phases of medicine which are now inadequately pursued. Thus we are still ignorant of the cause of most of the more serious of the infectious diseases; a wide field for discovery is here open. Methods of diagnosis and methods for the prevention of many diseases are still to be sought. The new outlooks in psychiatry are full of promises in the prevention as well as in the cure of many phases of mental disorder. The cause of tumors, which bring to men so much suffering and lead to so many premature deaths, is yet to be discovered and modes of cure to be devised. Almost all of the many sides of public and personal hygiene and sanitation offer problems of extreme scientific and practical importance under the complex conditions which more and more our modern life presents. It is safe to say that four-fifths of the existing suffering from disease and its attendant discomfort and misery are avoidable through the diffusion and application among the people of the knowledge of disease and its causes, which science has recently brought to light and which is now largely ignored. Such an institute if founded in a great city would find some of its most immediate as well as beneficial achievements along the line of popular instruction by museums, by text, by lectures on the ways of securing and maintaining health.

We have no National Health Board in the United States, and I should expect such an institution to furnish facilities for advanced research and for special instruction in the great public health problems which are crowding fast upon us, as well as an example and a stimulus for better things all over the land.

Such an institute as has been here suggested would require a large building for its various sections and should have control of a small tract of land outside the city in which it should be established for the care of experimental animals. The institute should have a section in chemistry, especially the chemistry of life, a physical section for studies requiring accurate instrumental records, bacteriological, pathological and general morphological laboratories, a special library, a public museum of hygiene and sanitation, a large public lecture room with facilities for demonstrations, smaller lecture rooms, a section for records and statistical data, private laboratories for investigators and advanced students as well, suites for its regular working force.

The institute would need a director, a chemist, a bacteriologist, a pathologist, a sanitarian; and each of these would require associates or assistants. A librarian and recorder and stenographers would be required, also a mechanic and a general superintendent of the plant, aside from the necessary attendants. There should be provision for special public lectures from time to time and a sufficiently liberal publication fund.

I estimate the cost of maintenance of such an Institute of Hygiene and Medical Research when equipped as at least one hundred thousand ($100,000) dollars per annum.

The institute which I have sketched has a somewhat wider scope than the Pasteur Institute in Paris, but the special conditions in this country strongly urge this variation in the conception.

I fear lest in the brevity of the opinions which I fancied that your request implied I may not have adequately set forth the strength of my conviction of the great importance and urgency of some such an endowment as is suggested.

It is certain, however, that such an undertaking, which should unite in its aims the advancement of medical science and the diffusion of important practical knowledge in hygiene, would find a clear field and an immediate harvest of far reaching beneficence.

From Dr. Prudden to Dr. Baldwin at Saranac

New York, January 7, 1905.

In the study of pneumonia which has been begun by the Commission for the Investigation of Acute Respiratory Diseases, of the New York Health Department, one of the most important of the preliminary problems is the determination of the frequency of occurrence in healthy people, or those not having pneumonia, of capsule cocci resembling or identical with the pneumococcus.

We are getting together a lot of data in towns and cities where people are closely associated. But we are greatly in need of facts about out-of-door folks, who don't travel in tram or railway cars, who don't go to saloons, variety shows, balls, theatres, and churches.

I write to you with the concurrence of Dr. Biggs to inquire whether you have anybody at Saranac who, with suitable compensation, could under your supervision, if you have time and feel disposed to look after it, examine mouth secretions of out-of-door well people—farmers, woodsmen, milkmen, etc. This would mean the morphological examination of material from each case and the inoculation of mice, with recovery in culture from positive animals.

We have blank charts showing points to be noted, but if it were not practicable to work out the full biology of capsule cocci isolated, these could be sent here to the clearing house for cultures under Professor Hiss, who would have the study completed.

Our idea is to have the results of such studies in different places embodied in separate papers for collective publication later, together with a general summary of results by the Commission. What we have provided for in the way of an honorarium for each individual making such studies is in general $50.00 per month for such part of the worker's time as might be available, together with the necessary outlay for animals etc.

We realize that you are a very busy man, and may not have the proper person at hand, or may not feel it possible to look after the matter, but if it were practicable to have a contribution from the Saranac laboratory of this nature, it would cover a field which is of the greatest importance for the completion of our understanding.

Give my kindest regards to Trudeau. We are all mighty happy to hear that he is pulling up. He is certainly a wonder.

P.S. Of course if it should so chance that you could do this work yourself at odd times, if such there be, we should be much delighted.

Note on the Use of Moving Pictures in Public Health Education

For example, one of the most powerful and rapidly extending educational forces of the time is the moving pictures. It is estimated that over twenty million persons daily come under the sway of these most appealing object lessons. There seems to be no parallel in the past or present to the influence which, for good or ill, these films in the aggregate exert.

So far, story, adventure, romance, travel; comic, farcial, sentimental, or tragic incident; and the record of the spectacular doings of the day, the world over, have dominated the field. Some essays in instruction in science and the arts have, however, punctuated the thrills and the sentiment and the mirth of the chief attractions. Now and then special industries and trades and even local philanthropies are set forth.

When the current extravagancies shall pall, as they seem likely to do, it is probable that a larger share of the popular interest can be claimed for genuine instruction in many things which are worth knowing.

At any rate, the moving-pictures have come to stay, and in the end will be adapted to the tastes and requirements of those to whom they minister. So it would seem to behoove those who seek the general welfare to make use when possible of this powerful educational agency to divert public interest to more worthy channels.

Were it desirable, it would be easy to particularize many scientific, social, and philanthropic activities from which without elaborate or costly staging interesting films could be made, which would be of great value. Many phases of instruction in hygiene in the schools and elsewhere, and the task of general enlightenment in the ways of healthful living could readily be covered in this way.

Several films relating to public welfare and social and industrial betterment and instructive civic activities are already current and popular. The number and scope of these might readily be extended.

We should not be understood as advocating the establishment under any department of the Institute of a chain of moving-picture shows. But a group of persons enlisted in an educational campaign might well coöperate in the selection of suitable themes for demonstration by the films, and even be helpful, when necessary, in their initial manufacture.

This is the text of the letter mentioned on page 105.

From Dr. Prudden to Dr. Seth Low

November 11, 1901.

Will you permit me to lay before you some facts and personal opinions which lead me to hope that in considering candidates for the position of Commissioner of Health you may weigh the qualifications of Dr. Hermann M. Biggs, who has been for several years an active and efficient promoter of the highest interests of the Health Department of New York.

In the early days before bacteriology had given precision to the problems of sanitation, the Health Department of New York City, with various ups and downs, was fairly efficient in the ordinary inspection of foods, plumbing, etc., and in what could then be done to limit the spread of the infectious diseases. But its accomplishments were not, I think, especially noteworthy among those of similar organizations in other large cities.

As soon as the nature of the infectious diseases became clear in the early eighties through a knowledge of their inciting factors, the micro-organisms, the problems of public sanitation and of disease prevention on a large scale assumed new significance, and the possibilities of great and immediate benefit opened clear and wide. Several years passed, however, here as elsewhere before the new knowledge was brought into practical use.

Dr. J. D. Bryant, who had been appointed Health Commissioner by Mayor Hewitt, took the first step in New York toward the recognition of the new outlooks in public sanitation by the appointment, in 1887, of a semi-official, unsalaried Board of Consulting Pathologists, three in number, Dr. H. M. Biggs, Dr. H. P. Loomis, and myself, who were also bacteriologists. This Board formulated the great possibilities which were at hand in the prevention of tuberculosis in New York, and repeated attempts were made to secure an appropriation from the city for a laboratory and the facilities for commencing the fight against this disease. These attempts were all unsuccessful. Nevertheless, under the inspiration of Dr. Biggs an educational work on the subject of tuberculosis was begun and a series of circulars was issued to both physicians and laymen setting forth the ways in which a great limitation of the ravages of tuberculosis could be brought about by wisely directed individual effort.

It was not until the cholera ships began to accumulate in New York Harbor, in 1892, I think, under conditions which you will recall, and panic apparently impended that Mayor Grant's interest was enlisted by Dr. Bryant, and an emergency appropriation secured for the organization in the Health Department of a new Division of Bacteriology and Disinfection of which Dr. Biggs was made chief. Then for the first time in New York City was a disinfecting station established with steaming chambers and furnaces and a system of house disinfection inaugurated, which took account of the real inciting agents in infectious diseases and actually did disinfect.

A small laboratory was established, whose first work was the diagnosis by culture of scattering cases of cholera about the city, and thus the spread of the epidemic was promptly stayed. All this was accomplished by Dr. Biggs, who brought to his new undertaking a thorough practical knowledge of pathology and bacteriology, a hearty devotion to the difficult problems of organization, and noteworthy tactfulness in pushing to successful execution plans for the city's welfare in this new field, plans which were not infrequently opposed by the ignorant and self-seeking in and out of office. From this time on, the advances in the quality and scope of the work of the Health Department were rapid and noteworthy. Diphtheria antitoxine was manufactured after a long and careful study of the problems involved and was placed at a small cost freely at the disposal of the citizens of New York as well as many others at a time when the foreign supply was deficient and its cost for the poor almost prohibitory. In this making of diphtheria antitoxine by the Health Department under the initiative and guidance of Dr. Biggs, New York was the pioneer in this country and was most helpful to the other agencies in other cities who later followed in its footsteps.

The Health Department of New York was the first in the world to establish, in 1893, a system—planned and led to successful execution by Biggs—of free public diagnosis of diphtheria in its early stages by means of cultures, a system which has been widely adopted in this country, in England, and on the continent. It is not too much to say that many thousands of children's lives have been saved by this system of early diagnosis leading to the effective use of the diphtheria antitoxine.

With an increase in the number of skilled workers, made possible by the creation of a fund formed and sustained from the sales of antitoxine, the scope of the laboratory work widened, and an important system of early free diagnosis in tuberculosis was undertaken in the Department laboratories. This has gradually led to a great improvement in the tuberculosis situation in New York. The steps taken in this direction were repeatedly referred to at the last Tuberculosis Congress by Koch as worthy of universal adoption. I need only mention further the noteworthy advancement of the Department in the study of new methods for making vaccine and the establishment of a new model vaccine laboratory; also of a laboratory for the safe study and care of the plague, should it gain a foothold here. The problems involved in securing a pure milk supply have recently been taken up. In the inception and execution of all these projects, Biggs has been the leading spirit.

Thus until the advent of Tammany four years ago, the Health Department, largely always under the wisely directed and unremitting impulse given by Biggs, had for several years led the way in this country in the adoption of new methods in the prevention of disease, some of which I have brought to your attention.

It was, as I chance to know, a serious question with Biggs whether he should drop the work when Tammany came in or cling to it in the hope that some of the hard-won ground might be saved. He decided to stay and has done so in the face of most disheartening conditions. There was actually no one who could make even a pretense to fill his place, so that he and a few of his associates have been permitted to remain in a state of half-suspended activity. The subordinate positions in the whole Department are filled with the district leaders' appointees, and the work has greatly deteriorated. But the system of inspection, the disinfecting plants, and the laboratories still exist, and need only rehabilitation to bring the Department again into a strong working condition.

I have known Biggs for many years, especially in his relationships to the Health Department and in connection with other measures concerning the public welfare, and have learned to hold his executive capacity in high regard. He is a thoughtful, cautious, clear-headed man, whom I have all reason to believe most conscientious and trustworthy, and has a capacity for bringing to successful issue undertakings which require the utmost tact and energy and untiring persistence. He has shown marked foresight and address in urging such legislation as has been necessary to secure the benefits of newly devised methods in the prevention of disease.

He is acquainted with the details of administration in the Health Department from top to bottom and has, as I well know, a most clear conception of the ways in which the great powers and scope of this organization may be used in the prevention of disease with the least interference with the comfort and business of the people.

I may seem to be extravagant in my estimate of Biggs, but I have the conviction that if he were made Commissioner of Health, he would bring to the office such qualities as would go far to assure in that phase of the municipal work an administration which would not only be most beneficent for our own city in bringing to bear upon urgent practical problems his wide knowledge, experience, and executive capacities, but would give the Department a leading position in this country.

I think it not unworthy of consideration that Biggs is in thorough sympathy with the aims of Dr. Doty, who, as Health Officer of the Port of New York, will be ex-officio a member of the New York Health Board.

It would seem almost essential, if full advantage is to be taken of all the new possibilities which science has to offer in practical municipal sanitation, that the President of the Health Department, as is permissible under the amended charter, should be not only a physician but an expert in the new fields.

I think that it would be difficult to find another man so well equipped as Biggs with modern technical knowledge in bacteriology, hygiene, and sanitation; with the experience of a practicing physician; and with the proved capacity for getting things done. Furthermore, I know of no other capable of filling this position who could take control without a large loss of time in getting acquainted with the complex details of administration in the Department. I believe that if his qualities commended him to you and he could see his way clear to the personal sacrifices which such an undertaking involves, Biggs gives promise of the making of an almost ideal head of this important Department.

I am writing to you thus freely and frankly about the Health Department because the hour has apparently come for which some of us have looked long and eagerly, when the new knowledge of disease can be made available in a large way here in New York for the welfare of the thousands who are now each year the victims of preventable disease.

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CHRONOLOGY

1849—Born in Middlebury, Conn., July 7.

1851—Family removed to Southbury, Conn.

1856—Family removed to Watertown, Conn.

1863—Family removed to New Haven, Conn.

1872—Graduated from Sheffield Scientific School with degree of Ph.B.

1872-1874—Instructor in Chemistry to Freshmen at Yale.

1875—Degree of M.D. from Yale Medical School.

1876—Interne at New Haven Hospital.

1876-1878—Studied abroad.

1878-1882—Assistant to Dr. Delafield at the Laboratory of the Alumni of the College of Physicians and Surgeons in New York.

1880-1886—Lecturer in Normal Histology at Yale Medical School.

1882-1892—Director of the Laboratory of the Alumni Association of the College of Physicians and Surgeons.

1885—Studied abroad with Dr. Koch and Dr. Hueppe.

1887—Became a consulting pathologist of the Board of Health of New York City.

1892-1909—Professor of Pathology, Columbia University Medical College.

1897—Degree of LL.D. conferred by Yale University.

1901—Member of Board of Scientific Directors of Rockefeller Institute.

1909—Emeritus Professor of Pathology at Columbia University.

1914—Member of the Public Health Council of the State of New York.

1921—Member of the International Health Board of the Rockefeller Foundation.

1924—Died April 10.

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